P.S

THE PREVENTIVE MAINTENANCE MONTHLY

Issue 30 1955 Series

...I'll be a dir-r-rty bird...

DANGEROUS CHARA

Dear Half-Mast,

The way I've got it figgered is like this: When your Ordnance or Engineer equipment won't work or goes to pot, it's ten-to-one that most of the trouble comes from guys who don't do their maintenance.

You see, when the going gets rough, the guy I want next to me is the one who keeps his stuff in top-notch operating shape. I'm with him all the way.

I figger that the Joe who lets his maintenance slide is just driving nails in his own coffin—mine, too. He's the guy whose rifle jams when the showdown comes; or the one whose truck won't run when you've got to move stuff to the front—fast; or the guy whose tank stalls or his guns won't work when the stuff starts to fly.

If I could tell these characters how dangerous they are—to their buddies and themselves—maybe they'd wake up and get on the ball.

How about telling 'em for me?

Sgt H. M. G.

Dear Sergeant H.M.G.,

Sure will.

Half-Mast

DANGEROUS CHARACTERS

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CTERS

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ON THE DOWNHILL SIDE BRAKES WILL GIVE YOU FOR TRUCKS

You simply don't depend on brakes alone when you're going down a steep hill. Your engine's there to give some help, too.

And using the engine's braking power is an art that any good driver can master. But first he's got to squelch that urge to coast.

Coasting downhill with the clutch pedal down against the floor board and the transmission in gear, then letting 'er out while going at terrific speed gives business for the junk pile.

HOW IT WORKS

Follow along and see how this works . . . power from the engine goes thru the clutch, to the transmission, to the transfer case, then to the differential. The little gear spins the big gear in the differential which turns the axle shaft attached to the driving-wheels. When it works this way, nothing can go wrong because the carburetor governor controls the amount of gas going into the engine. The engine can turn over just so fast and no faster. It won't let the clutch and gears spin above their safe limits.

Now, let's take it backwards. When you get your power from the wheels by going downhill—you override the engine. The governor can't hold it back. You make the big gears spin the little gears and clutch above their rated RPM.

When this happens, the vehicle's innards will start to fly.

A GOOD RULE TO FOLLOW:
GO DOWN A HILL IN THE SAME GEAR YOU'D USE TO GO UP THAT HILL.

ON THE DOWNHILL SIDE

KEEP IN GEAR

BRAKES + ENGINE

WILL GIVE YOU THE BEST HOLDING POWER FOR TRUCKS ROLLING IN THE MOUNTAINS

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A GOOD RULE TO FOLLOW:
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The important thing is to put the vehicle into the lower gear as soon as you reach the top of the hill—**not** after you've drifted halfway down and then suddenly slam in the clutch and try to throw the transmission into a lower gear.

Even if you did get that transmission into neutral, your speed might be too fast to let the gears mesh when you try to get back in gear. Then you've got a runaway vehicle.

Keep your vehicle under control—**always.**

Get acquainted with the speed limits on the caution plate, then keep your speed down to it by using the foot brake. Keep an eye on the speedometer, and remember that you'll need more braking when the vehicle's loaded.

Watch that you don't go over the speed limit for the particular gear you're in.

USE THE FOOT BRAKE

When you're going downhill and using your engine as a brake, you'll overrun the governor if you don't hold her some with the foot brake.

Going downhill in a low gear and letting the vehicle roll too fast will really rev the engine up. Bearings might burn up, and parts might start to fly. They weren't made to take that kind of guff.

If you let that right foot take pot shots at the accelerator—you're in for trouble. As long as you keep your foot off the accelerator, the engine plus braking will keep your vehicle from rolling faster.

When you're using the foot brakes to help the engine, be sure you don't slam em on. Ease them on and off as you need them. Slamming them on fast can throw your vehicle into a skid or spin.

NO DOWN-SHIFTING

Using the engine as a brake at stop signs and traffic lights is good practice, but braking by down-shifting has always been taboo.

When coming to an intersection or a stop, let up on the gas pedal, ease on the brake pedal, and don't touch the clutch until the truck starts to ease to a stop—then throw in the clutch.

Use your brakes and clutch as a team and give them both a break.

If you want to see what TM 21-305 says about using your brakes and engine, read para 15b of Chapter II real careful-like.

+ENGINE

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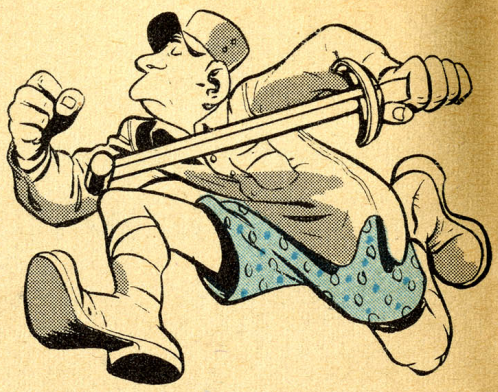
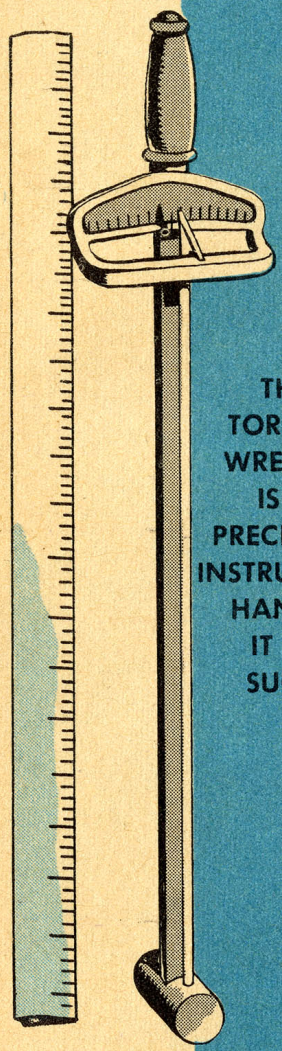
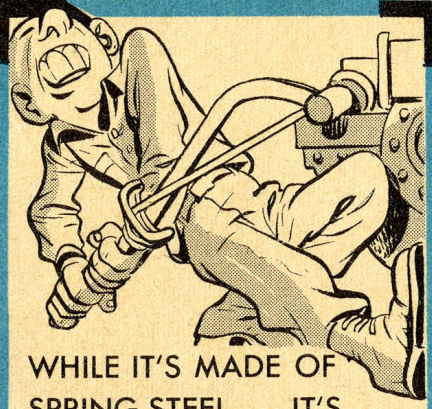
DON'T GO OFF HALF-TORQUED





THE TORQUE WRENCH IS A PRECISION INSTRUMENT. HANDLE IT AS SUCH.

1



WHILE IT'S MADE OF SPRING STEEL . . . IT'S GOT AN ELASTIC LIMIT . . . YOU CAN READ THE LIMIT ON THE DIAL. NEVER FORCE IT . . .

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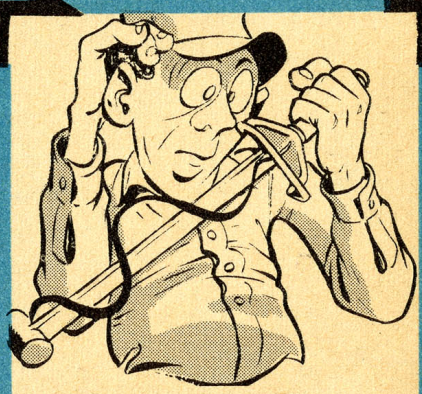

KEEP THE POINTER STRAIGHT . . . READING A COCKEYED POINT IS LIKE SCRATCHIN' WHERE IT DOESN'T ITCH.

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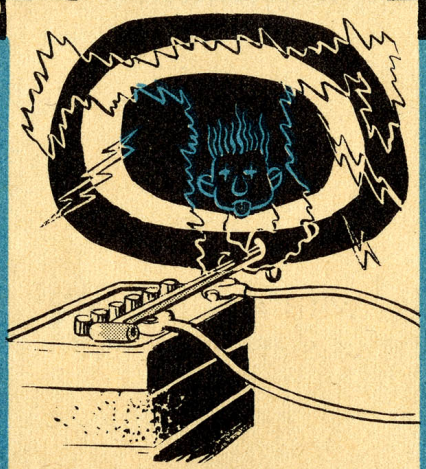

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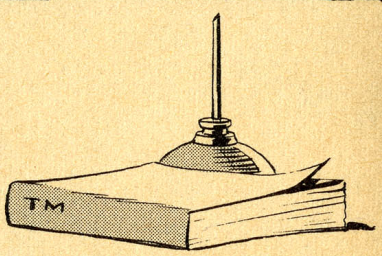

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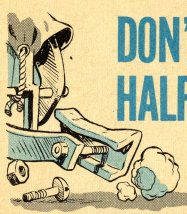

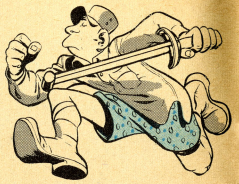

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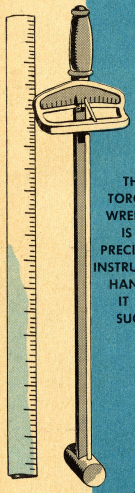

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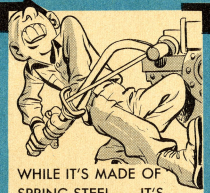

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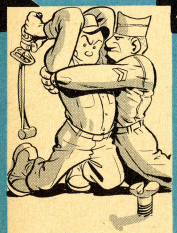

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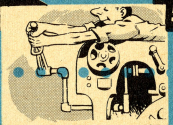
4



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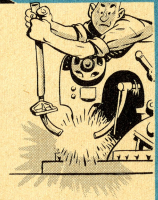
5



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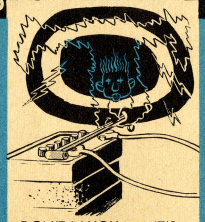
6



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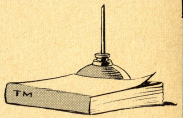

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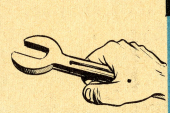

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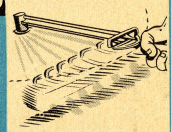
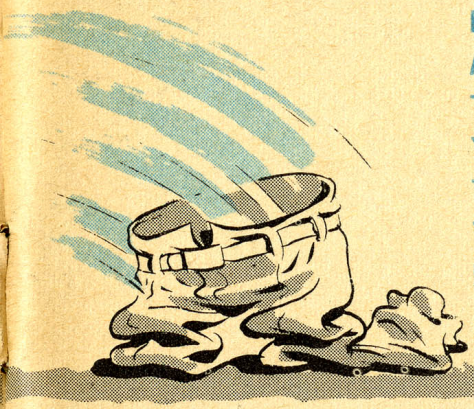


TORQUE WITH A STEADY SWEEP . . . . . SHORT JERKS WILL JIGGLE THE DIAL, PAL.



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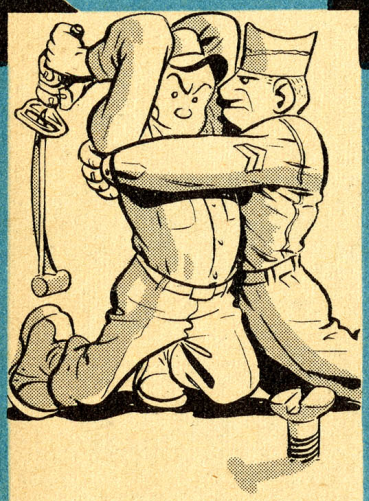

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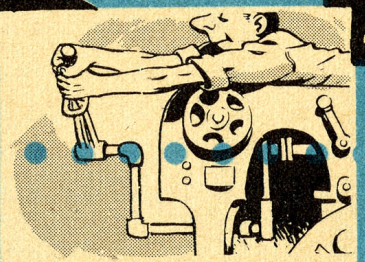

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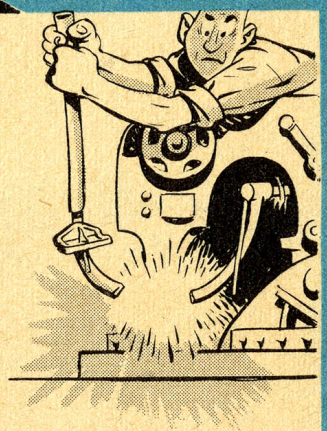

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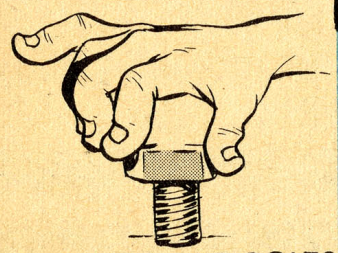

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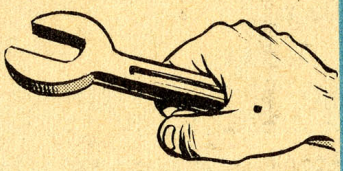

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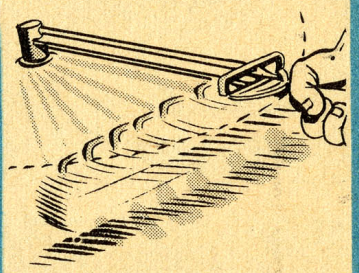
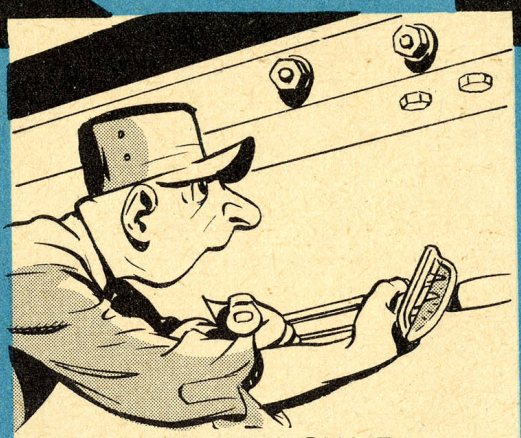


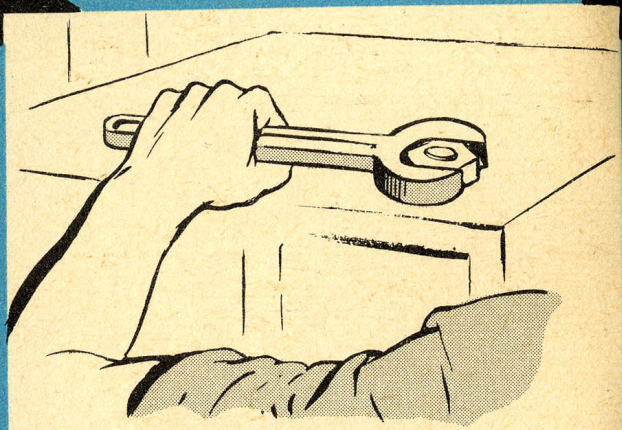
TORQUE WITH A STEADY SWEEP . . .
. . . SHORT JERKS WILL JIGGLE THE DIAL, PAL.

11



NOW LET'S SEE HOW IT WORKS . . . TO CHECK YOUR EQUIPMENT FOR CORRECT TORQUE.

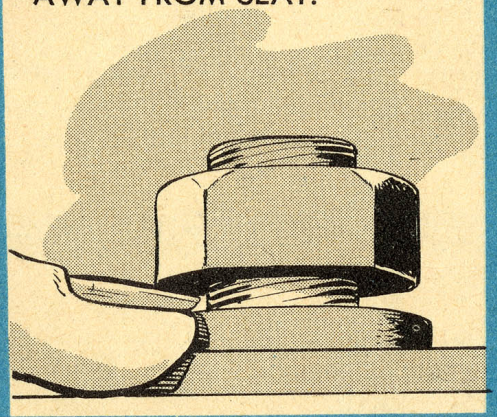
12

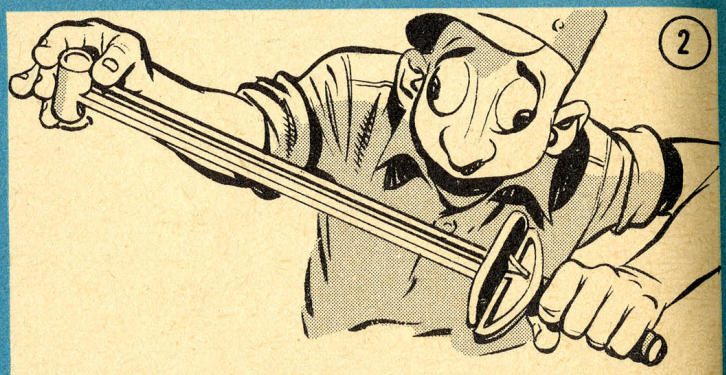


FIRST BACK OFF NUTS WITH AN ORDINARY WRENCH . . . BACK 'EM UP JUST FAR ENOUGH SO'S T'GET A RUNNING START.

NOW SUPPOSE YOU GOT A BURRED THREAD OR A NUT OR BOLT THAT'S

TURN IT DOWN ABOUT FINGER-NAIL THICK AWAY FROM SEAT. (1)





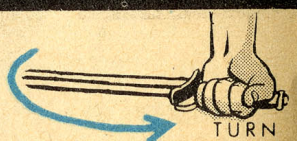
(2)

NOW APPLY THE TORQUE KEEP AN EYE ON THE NUT AND THE OTHER ON THE DIAL . . .

SPECIAL WORD ABOUT CYLINDER HEADS

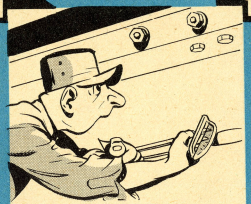
BE SURE YOU FOLLOW THE MANUAL FOR SEQUENCE ON THIS OR YOU'LL CRACK THE HEAD.

FIRST TIME 'ROUND . . .



TURN DOWN EACH BOLT TO WITHIN 5-10 FT-LBS. OF ITS CORRECT TORQUE.

11



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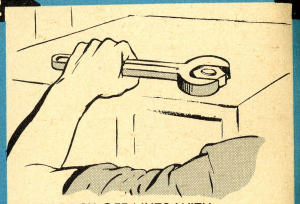
12



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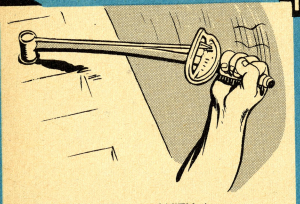
13



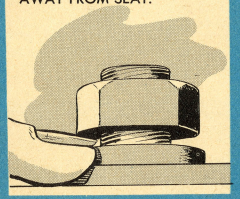
NOW TIGHTEN . . . WITH A NICE *EVEN* SWEEPING STROKE . . . LIKE CLOSING A DOOR.

14

NOW SUPPOSE YOU GOT A BURRED THREAD OR A NUT OR BOLT THAT'S AN EXTRA TIGHT FIT (WHICH YOU GOTTA USE FOR SOME GOOD REASON).

1

TURN IT DOWN ABOUT FINGER-NAIL THICK AWAY FROM SEAT.



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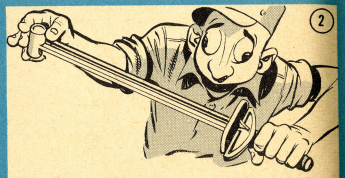

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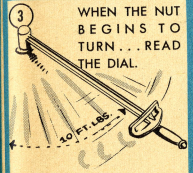
3

WHEN THE NUT BEGINS TO TURN . . . READ THE DIAL.



SAY THE PUSH TO TURN THE NUT IS 10 FT-LBS.

4

MAKE A NOTE (MENTAL IF YOU GOT ROOM UP THERE).

5

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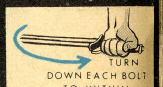


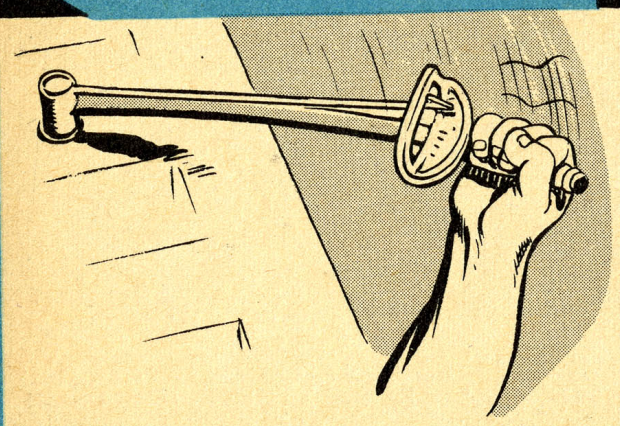
TURN DOWN EACH BOLT TO WITHIN 5-10 FT-LBS. OF ITS CORRECT TORQUE.

THEN

THEN COME AROUND A SECOND OR THIRD TIME AND BRING 'EM UP TO SNUFF.

EVERY ENGINE HEAD SEQUENCE IS DIFFERENT . . . SO KEEP A **TM** HANDY. *FOR EXAMPLE:*

13



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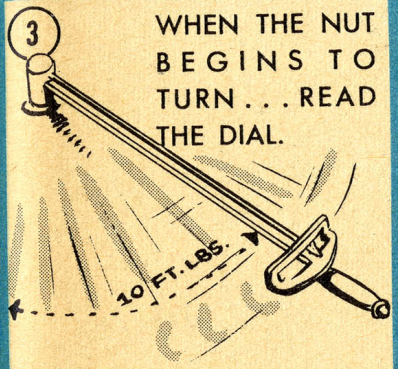
3



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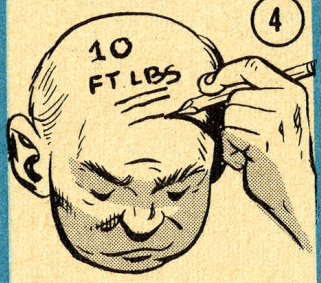

MAKE A NOTE

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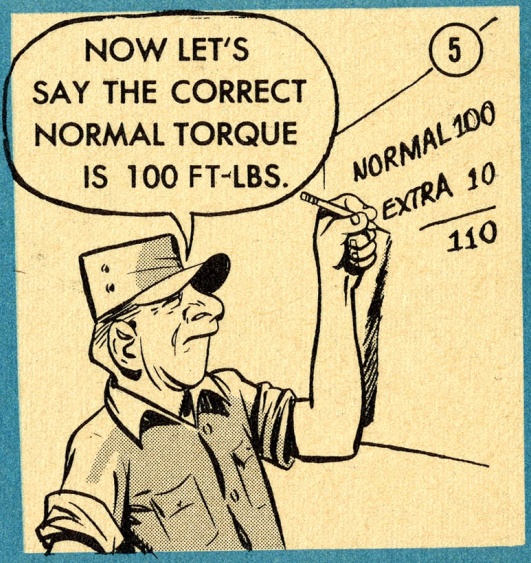
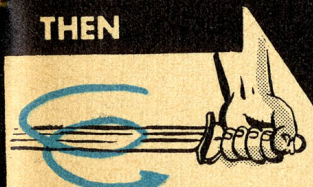
5



THEN



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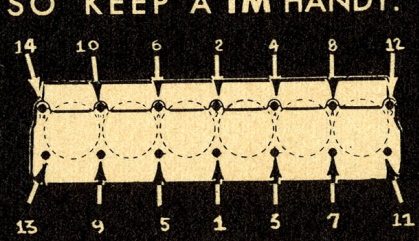
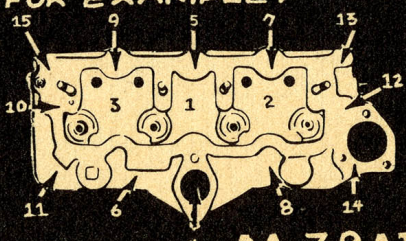


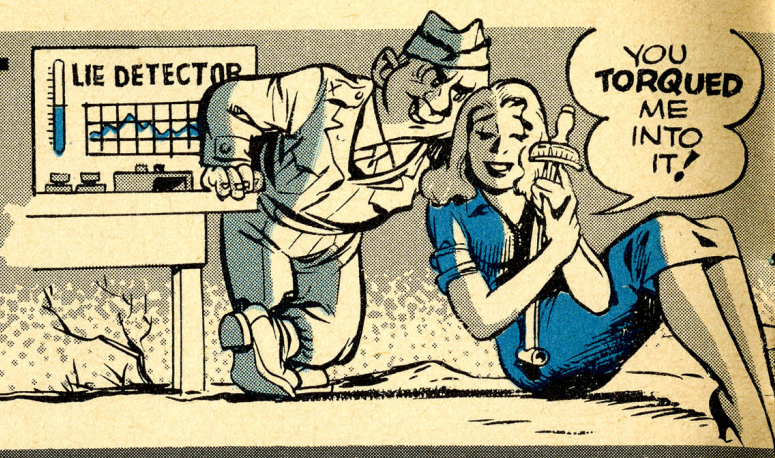
M 35



M 38A1

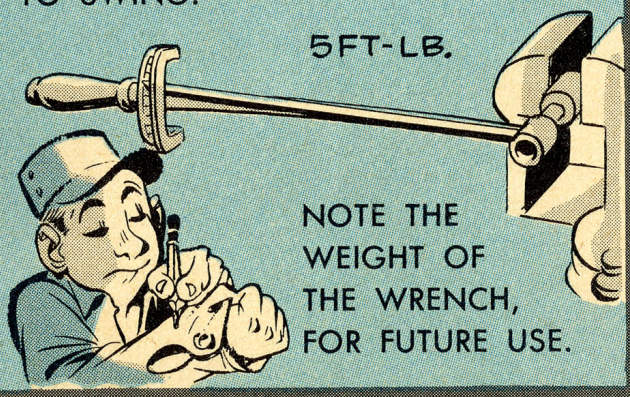
UNHAND THAT WRENCH

(SHE MAY BE LYING)

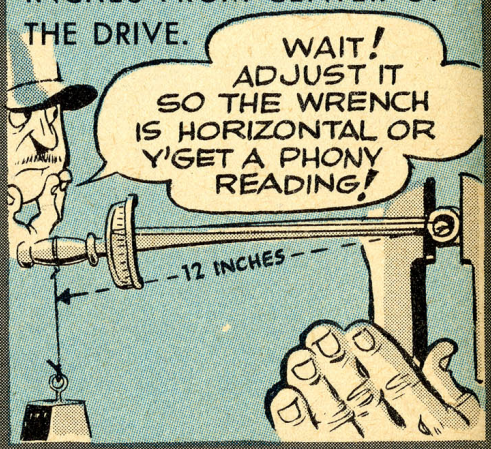


TEST TORQUE WRENCHES EVERY 30 DAYS...

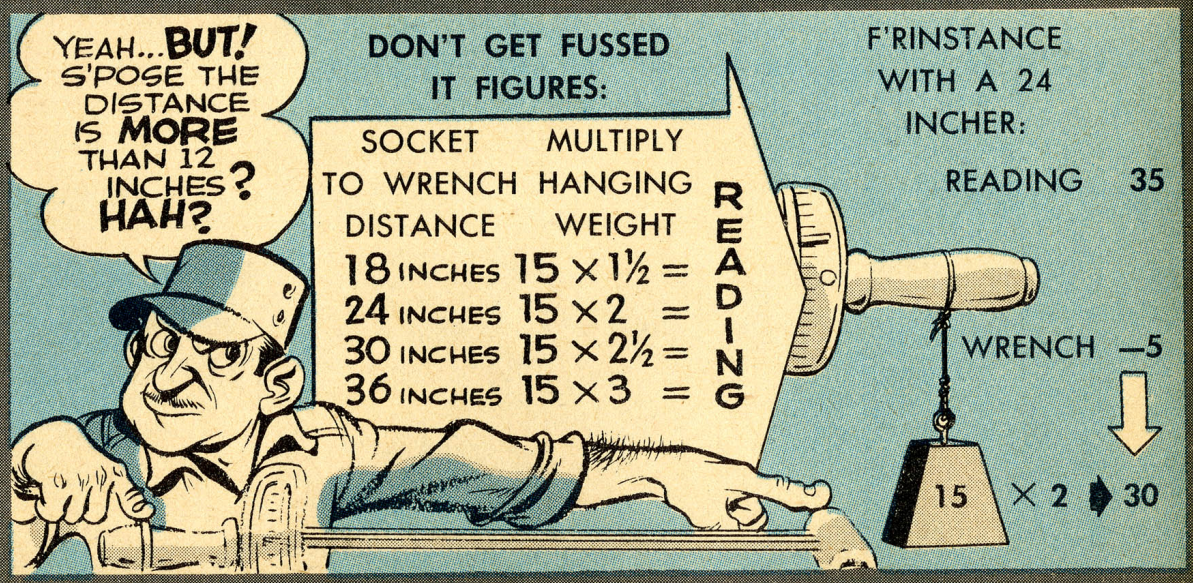
1 FIT A STANDARD SOCKET TO THE SQUARE DRIVE AND CLAMP IN A VISE SO WRENCH IS **HORIZONTAL,** FREE TO SWING.



2 HANG A KNOWN WEIGHT FROM THE HANDLE . . . 12 INCHES FROM CENTER OF THE DRIVE.



6



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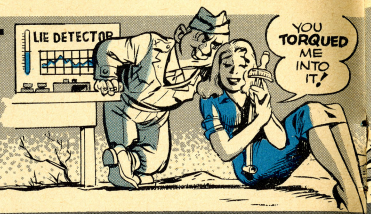
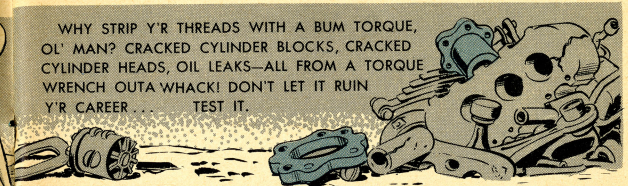


WHY STRIP Y'R THREADS WITH A BUM TORQUE, OL' MAN? CRACKED CYLINDER BLOCKS, CRACKED CYLINDER HEADS, OIL LEAKS—ALL FROM A TORQUE WRENCH OUTA WHACK! DON'T LET IT RUIN Y'R CAREER . . . TEST IT.



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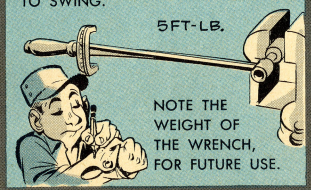
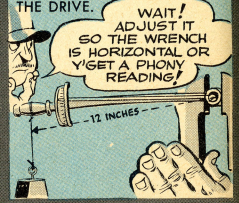


NOTE THE WEIGHT OF THE WRENCH, FOR FUTURE USE.

2 HANG A KNOWN WEIGHT FROM THE HANDLE . . . 12 INCHES FROM CENTER OF THE DRIVE.

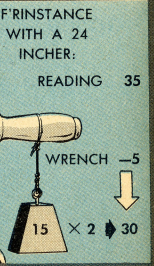


6 YEAH... **BUT!** S'POSE THE DISTANCE IS **MORE** THAN 12 INCHES? **HAH?**

DON'T GET FUSSED IT FIGURES:

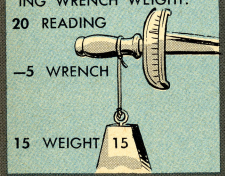
SOCKET TO WRENCH DISTANCE	MULTIPLY HANGING WEIGHT	READING
18 INCHES	15 × 1½ =	
24 INCHES	15 × 2 =	
30 INCHES	15 × 2½ =	
36 INCHES	15 × 3 =	

F'RINSTANCE WITH A 24 INCHER:

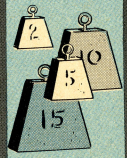


. . . IF NOT USED MUCH, TEST EVERY 6 MONTHS

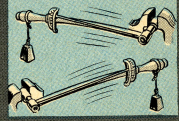
3 NOW THE READING IN FOOT-POUNDS SHOULD EQUAL THE HANGING WEIGHT, AFTER SUBTRACTING WRENCH WEIGHT.



4 FOR EXPERT JOB, CHECK WITH **FOUR** DIFFERENT WEIGHTS.



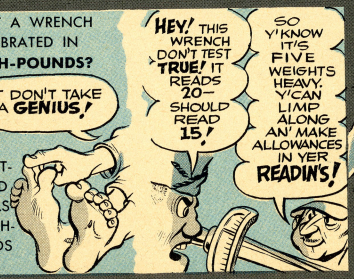
5 THEN YOU HAFTA GO THROUGH THE SAME DEAL ON THE OTHER SIDE O' THE VISE . . . TO CHECK THE OTHER HALF O' THE TORQUE SCALE.



7 GOT A WRENCH CALIBRATED IN **INCH-POUNDS?**

IT DON'T TAKE A **GENIUS!**

1 FOOT-POUND EQUALS 12 INCH-POUNDS



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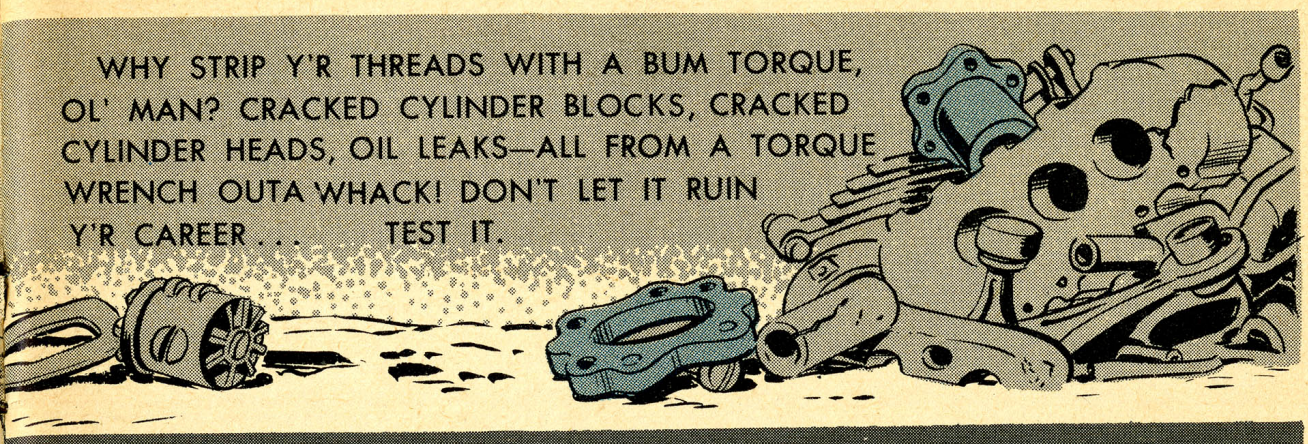

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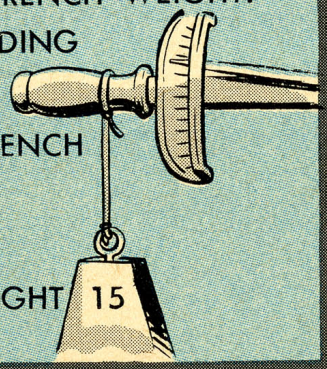
20 READING

—5 WRENCH

15 WEIGHT



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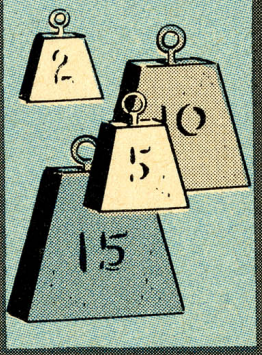

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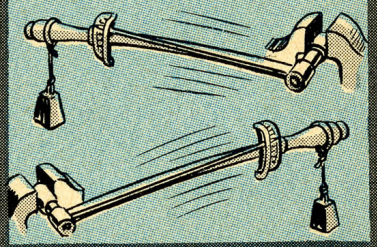

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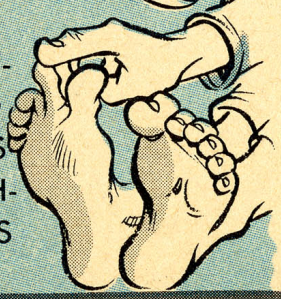
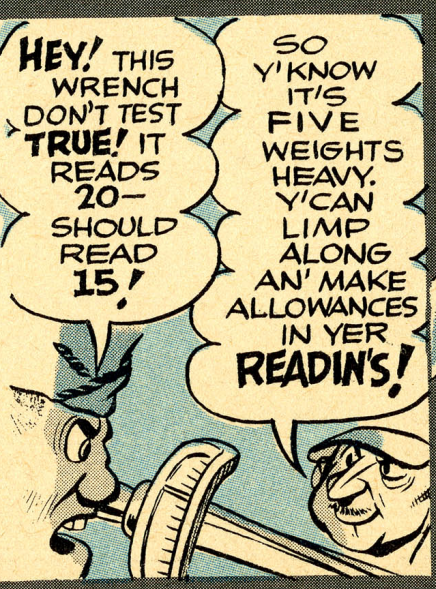


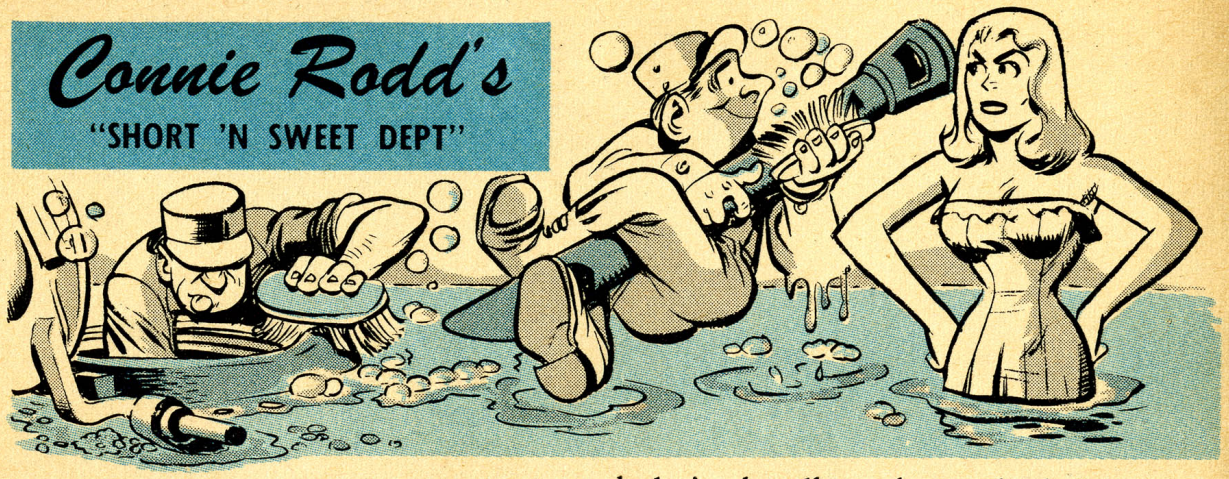
HEY! THIS WRENCH DON'T TEST **TRUE!** IT READS 20— SHOULD READ **15!**

SO Y'KNOW IT'S FIVE WEIGHTS HEAVY. Y'CAN LIMP ALONG AN' MAKE ALLOWANCES IN YER **READIN'S!**



I DON'T HAFTA! I'LL GET ONE 'AT TELLS THE **TRUTH!**

PRITT-Y FEEBLE 3½ FOOT-POUN'S!



Hose+water+caution!

There's more than one way to skin a cat. And there's more than one way to clean your vehicle.

You gotta use your bean when you pick up that hose to clean the inside of your tank or truck.

Squirting a high pressure hose inside a truck cab or tank fighting compartment is like punchin' a hornet's nest with a stick—you're asking for trouble.

Instruments, electrical accessories, and other delicate gimmicks just aren't made to take a shot of pressured water. So watch where you squirt that hose.

Best way to clean the inside of your truck cab or tank personnel compartment is with tame water, a rag and some elbow grease.

Fill that hole

Check for a hole in the exhaust elbow on the secondary heater kit (Ord Stock No. G249-5701774) in your M109 or M220 shop vans.

Some of these heater kits got in the field with the wrong exhaust elbow welded to the flexible exhaust tube at the heater. If you see a 1/8- to 3/16-in hole in the elbow, braze the hole over pronto.

If the hole isn't brazed, you'll have exhaust fumes coming out of it and that could be dangerous.

They'll blow...!

Just wanta remind you tankmen and armored personnel-carrier drivers. Before starting your main engine, with Li'l Joe running and the master switch on, make sure you've got all electrical equipment shut off—particularly your radio and lights.

That sudden high surge of voltage when the starter is released lasts just a fraction of a second—but plenty long enough to blow your light bulbs or radio tubes.

Got one?

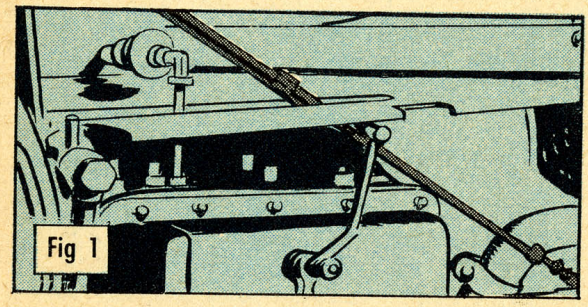
A rag in your hand is worth two in your foot-locker—when it's time to check your oil. You don't want to shove dirt in your crankcase.

Never wipe your dipstick on the ground or the fan belt. Oil kills fan belts fast.

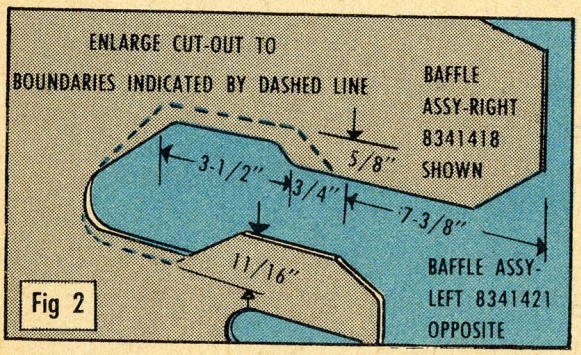
Best idea is to have a clean rag handy all the time—in your glove compartment.

M59 throttle-rod clearance

At the muffler baffle, that is. Those M59's with manufacturer's serial numbers below F-384 have sometimes developed a bind where the throttle-valve rods pass through the clearance hole in



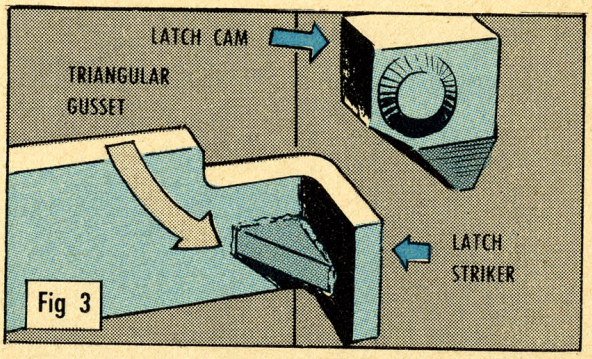
the muffler baffle (Fig 1). So the baffles have been changed, and are now called "deflectors." (They are still a part of the baffle assembly, though.)



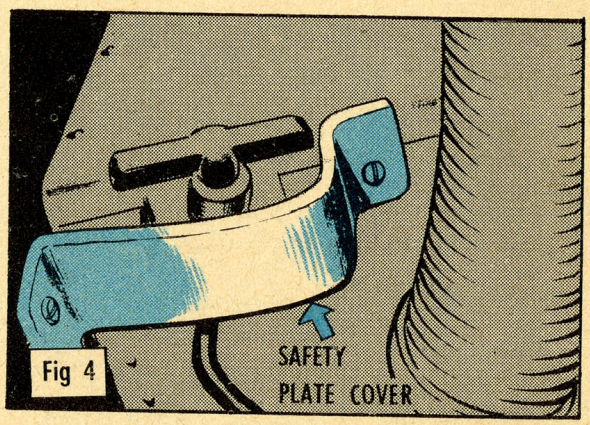
If you have one of the early M59's, and if your throttle rods are giving you trouble, you can chew 'em out to the dimensions shown on the sketch (Fig 2) and that'll fix you up. You'll see an MWO on this.

M75 personnel carriers

Couple of minor cures on the M75 personnel carriers: The rear door stops on early models will last longer and not bend if a small triangular gusset is welded into the right angle of the latch striker (Fig 3); 1/4-in plate will do the trick.



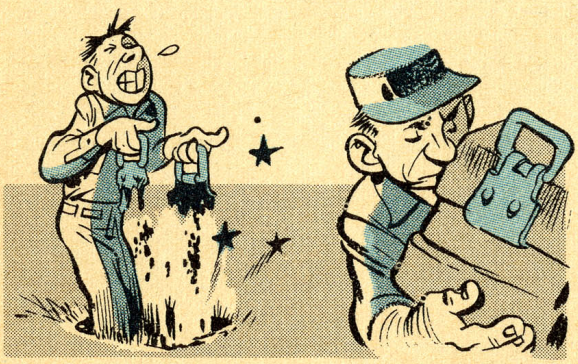
A light sheet-steel safety-plate cover bolted or welded around the engine compartment's CO_2 fire extinguisher pull-handle will prevent it catching on the driver's clothes as he climbs out of the vehicle. It'll still permit instant pulling by hand (Fig 4).



Ounce of prevention saves pounds of batteries

Some of the boys complain that if they give their battery carriers the right kind of maintenance, the handles on the 6TN's work loose from too much lifting and finally give way. They've smashed some batteries and some tootsies that way.

How about checking the handles before you lift? Keep the handle-to-battery connections clean and free of corrosion with a good acid neutralizer like soda water. And strong-arm stuff like hauling it out by one handle may impress the ladies but the 6TN's no lady. Lift it out even-like.



And another thing. Could it be you're getting excessive corrosion because you're in the sloppy habit of overfilling the battery? Take it easy. Do the small operation right and you won't have to do one or two of 'em so often—like cleaning battery carriers.

Exhaust crack-up

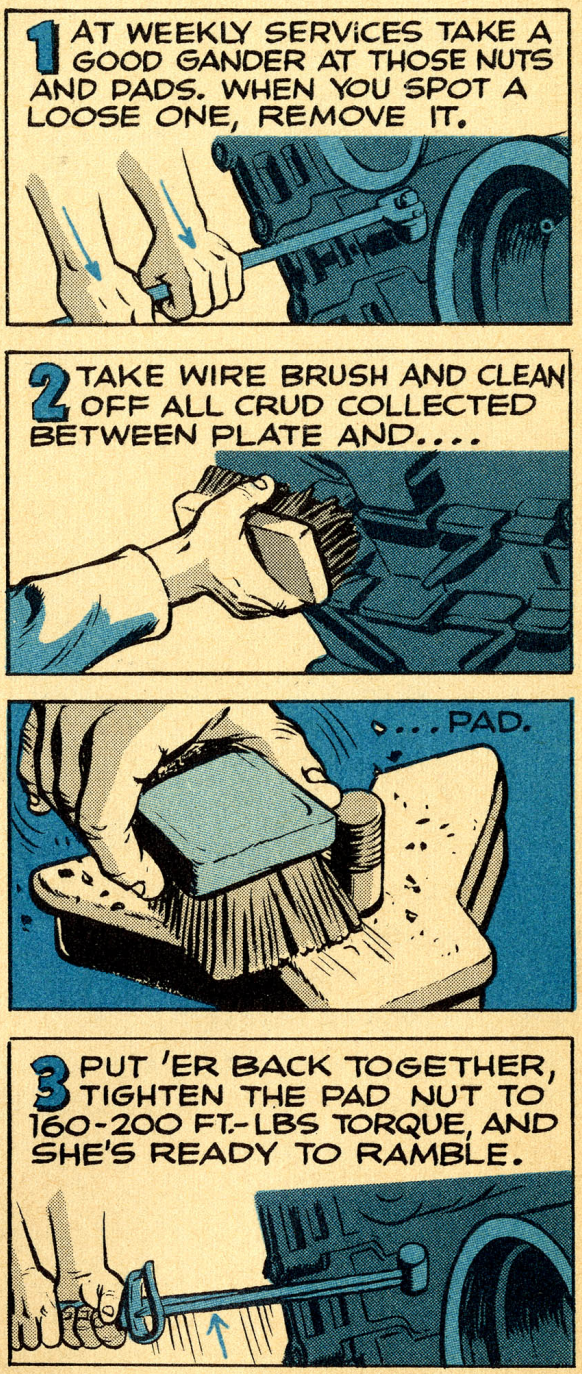
Now's the time to stop cracking the exhaust manifolds of your M59 personnel-carriers.

Those manifolds get hot. The heat makes them expand. But if you tighten the nuts that hold them to the engine-head too tight, it won't have room to expand. And the manifold cracks.

On the M59 the two end-nuts get only 20 to 25 ft-lbs torque, and the middle ones need only 12 to 18. That is, after the manifold's drawn evenly and firmly against the gasket first.

Watch the pads, lads

If you're using rubber track pads on your light-tank stuff—keep those pad nuts tight. A loose track pad'll let pebbles and stuff work in between the pad and shoe plate. And first thing y'know—the plate's cracked.



Handling Li'l Joe can be—

Duct soup

On late model M41A1 Tanks (Ord No. 2803, or later), you'll find an air-duct door arrangement between the right bulkhead service door and the auxiliary generator fan shroud (Fig 5). This new vent set-up can get you a lot more—with less trouble—from your Bulldog's Li'l Joe.

When the door's open (Fig 6), it lets cool air from the turret get to Joe—and at the same time shuts off the duct to the main engine area. This stops the recirculation of hot engine-compartment air, and cuts the danger of overheating and vapor lock.

In cold weather, you keep the door closed (Fig 6 Inset). This'll hold the personnel heater's warm air in the crew compartment—where it's appreciated. And, with the duct clear, warm air from Li'l Joe can circulate through the main engine area—where it's needed.

The vent door also lets you get at the generator hand-starter quick and easy.

One thing to remember: You always close the door for deep-water fording.

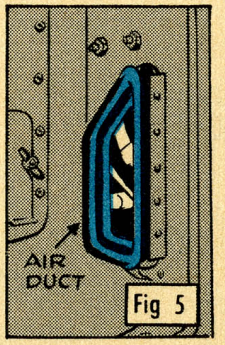


Fig 5

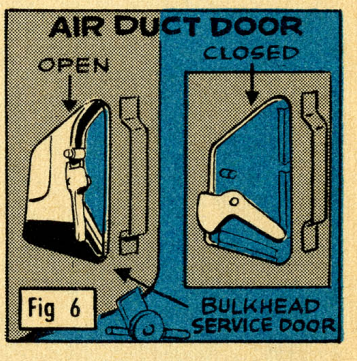
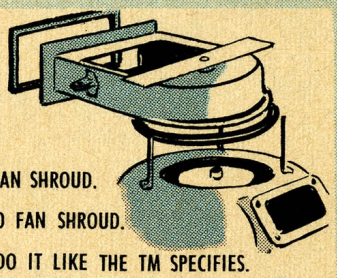


Fig 6

Duct out — duct in

Here's the way to remove that new auxiliary-engine-cooling air-duct assembly on late model M41 and M41A1 Bulldog tanks to clean 'em:

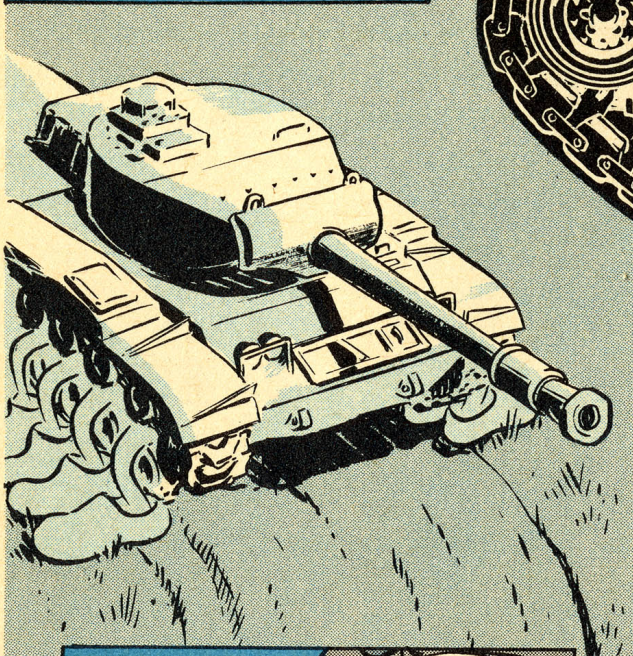


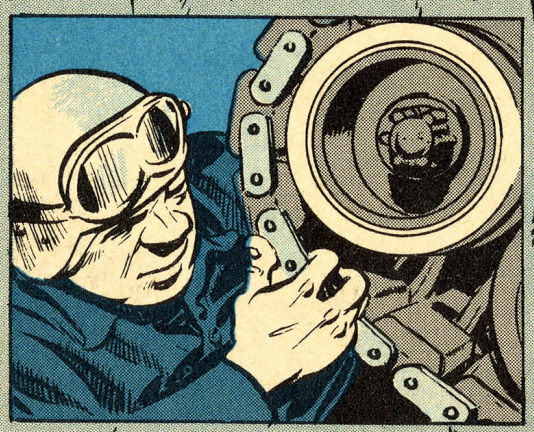
1. CLOSE COOLANT (VENT) DOOR IN THE BULKHEAD DOOR.
2. UNSCREW FOUR BOLTS HOLDING THE BULKHEAD DOOR.
3. DETACH RIGHT AIR-CLEANER OIL-CUP. THIS'LL GIVE YOU MORE WORK SPACE.
4. REMOVE THREE BOLTS THAT HOLD THE COOLING-DUCT FLANGE TO LI'L JOE'S FAN SHROUD.
5. ON SIDE OPPOSITE THREE BOLTS, UNHOOK FLANGED EDGE THAT HOLDS PLATE TO FAN SHROUD.
6. REMOVE LI'L JOE, SO YOU CAN TAKE OUT RIGHT MAIN-ENGINE AIR-CLEANER. DO IT LIKE THE TM SPECIFIES.
7. UNHOOK TWO SPRINGS ON AIR DUCT WHICH SEAL DUCT TO AIR-CLEANER.
8. REMOVE AIR-CLEANER.
9. RELEASE SCINTILLA CONNECTORS BY UNFASTENING TWO BOLTS THAT ATTACH HOLDING BRACKET TO THE AIR DUCT.
10. UNSCREW FOUR REMAINING BOLTS HOLDING AIR DUCT TO BULKHEAD— AND—OUT SHE COMES.

To install 'er—just reverse the procedure. But heed this: When you're lowering the auxiliary engine, raise the air duct as high as possible on the air cleaner. That'll keep Li'l Joe from snagging on the fabric.

Breaking-in can save
Breaking-up of your—

TANK RUB





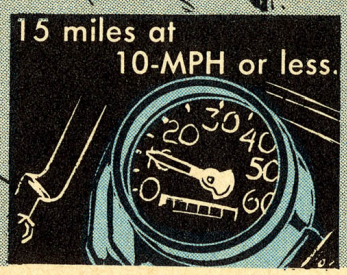
Dressing up your buggy with a complete new set of rubber shoes?

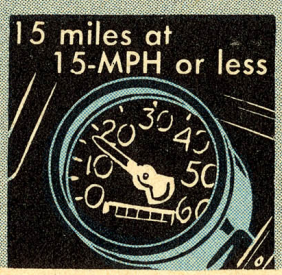
Chances are the replacement pads or chevrons you get will have lost a lot of their resilience—strength and bounce—while in storage. And if slapped right into rugged, normal use, they'll go to pot fast.

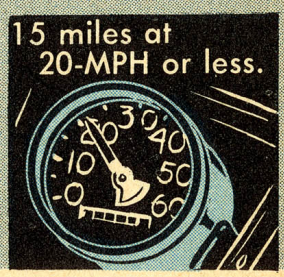
Give them the right break-in treatment first—and you'll find they last a lot longer.

For the break-in, which can be done during your normal driving, line out your chariot on a paved road, if one's available. If not, a smooth secondary road will do OK. Keep a close check for dead links and loose center-guides, wedges, etc.—check 'em before taking off and again at 5 and 15 miles—and give 'er a workout.

This break-in treatment is particularly important in hot weather. And

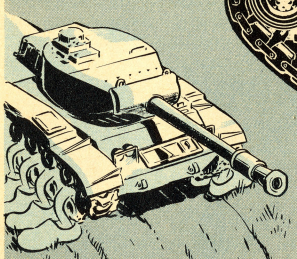


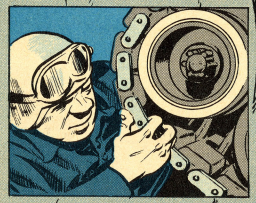




Breaking-in can save
Breaking-up of your—

TANK RUBBER TRACK





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This break-in treatment is particularly important in hot weather. And here's something else to keep in mind. Even on well-conditioned track, if you go barreling around at sustained high speeds (20-MPH or more) in temperatures of 85° F, and up—you're gonna get a terrific heat build-up in your track rubber. Result: chunking, tearing, even blow-outs.

'Nother thing that'll chew up your rubber like a chow-hound gobbles "SOS" is pivoting your vehicle on rough roads or rocky terrain. Try to avoid it.

If you happen to be operating mostly on crowned hard-surface roads (some people have it r-r-ruff), you'll probably find your chevrons wearing faster on the inside. Rotate the tracks from one side to the other—and see if you don't add a considerable chunk to its service life-span.

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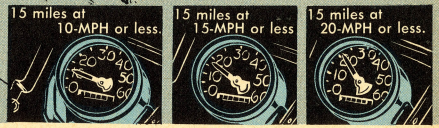

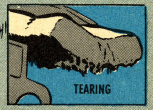

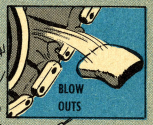

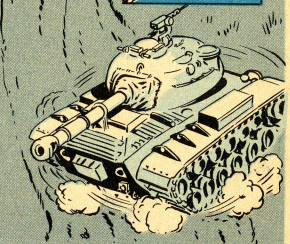

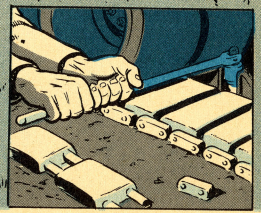

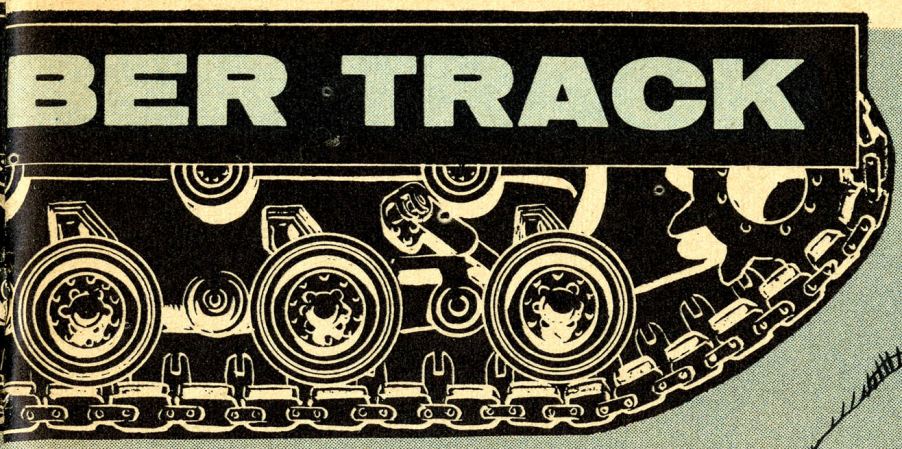

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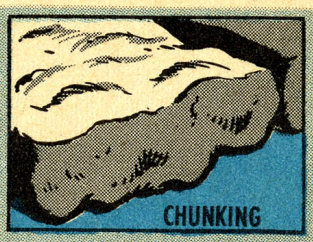
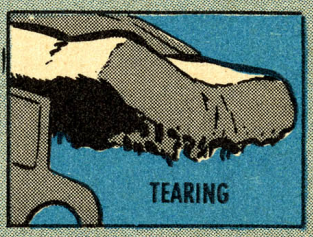
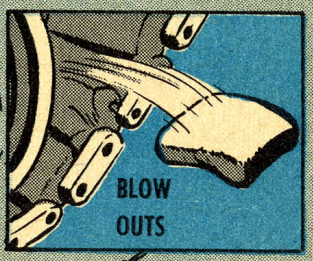
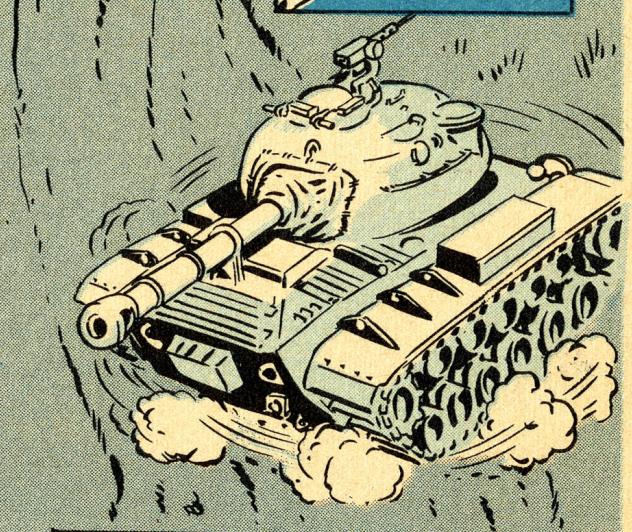
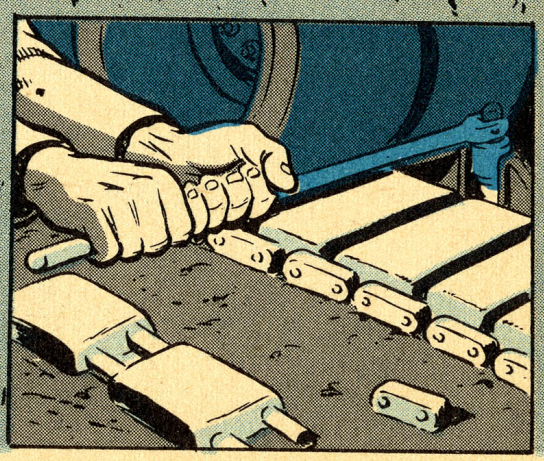








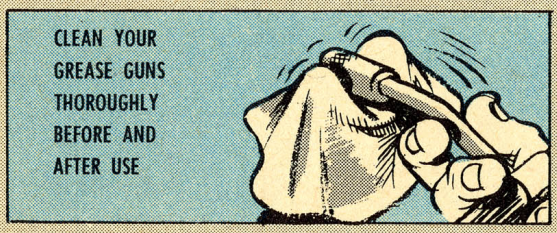


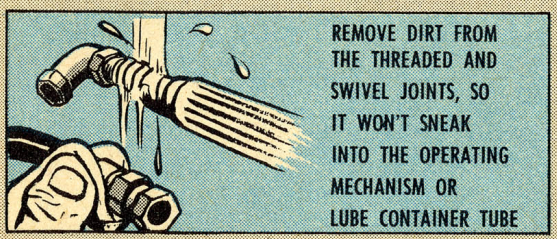
WHY TAKE LUBES WITH SAND FOR A CHASER?

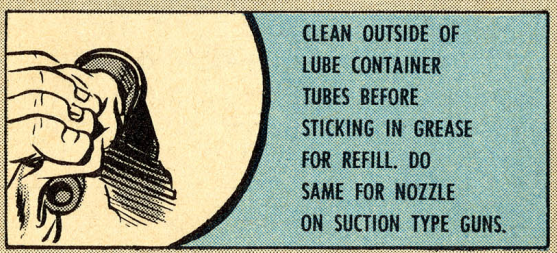
When you start lubing with dirty grease, it's like fighting fire with gasoline—you don't help the problem; you make it worse.

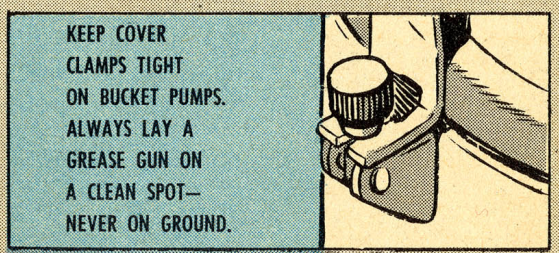
And vehicles aren't the only victims of dirty lube. So are guns and compressors—and anything with moving parts.

There are plenty of things you can do to keep dirt out of friction joints when you lube your equipment.







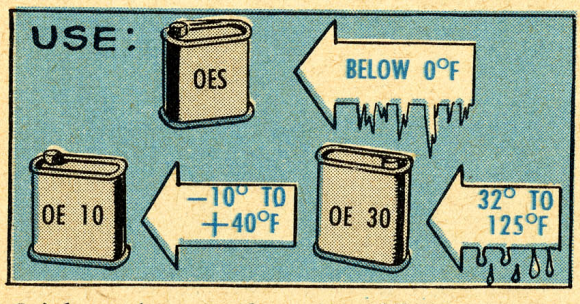


In the constant battle against wear and friction, grease is ammunition, but don't use it to shoot the guts out of your own equipment—keep it clean.

M48 TANK REVIEW

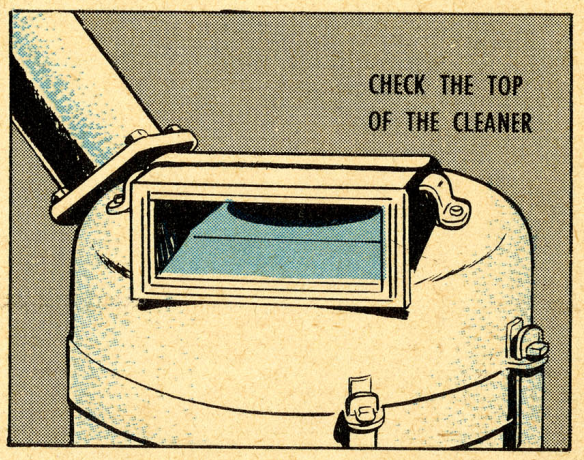
AIR CLEANER CLEAN-UP

Your M48 tank's oil-bath air cleaners need checking—before and during operation. Make sure they're in good shape, secure and full of the right weight oil.



Stick to these and you'll add life to your engine. Heavier oils at the given temperatures won't stop the dirt. And lighter oils tend to get sucked right through into the carburetor—dirt and all.

When the cup gets 1/4-full of sludge, or the oil as thick as molasses (when it looks like SAE 60), clean it out. Take off the pan and element, wash 'em with cleaning solvent, and shake dry. Then refill the pan to bead level (5-1/2 to 5-3/4 quarts) and reassemble. In dry and dusty going—such as desert operations—she'll need this **at least** once a day.



Y'may save your engine and yourself some grief by remembering to check the **top** of the cleaner before working on the pan and filter.

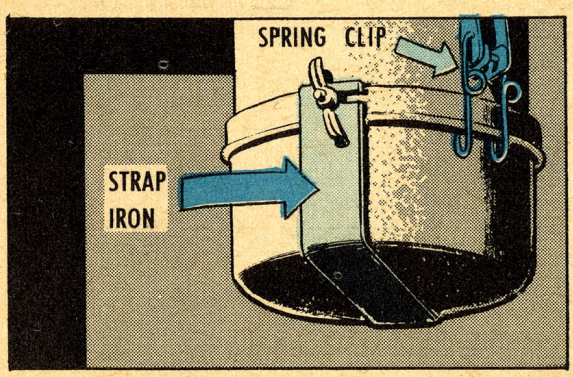
Just reach your hand into the intake air-duct and give 'er the ol' feel-around—just below the antibackfire baffle. Oil splashing here when she backfires collects dirt and builds up fast when the dust's a-flyin'. Enough sometimes to choke your power plant's breath down to a faint wheeze.

When y'feel it building up, clean 'er up like this: Remove the pan and filter, and replace the pan—without washing it. Take off the intake duct. (Turn the hold-down spring counterclockwise, and the duct lifts right off.) Remove the anti-backfire baffle. (One screw does it.)

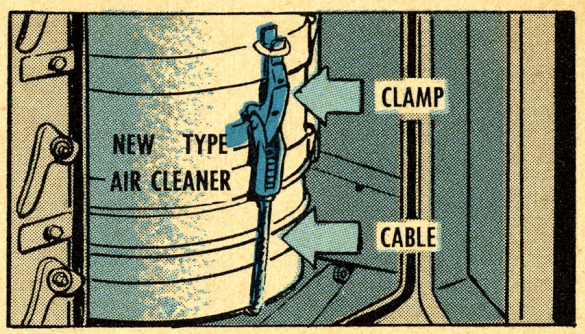
Now scrape and wash down the top section; the pan will catch the grime and muck. Dump it again; wash and dry it; likewise the filter and baffle. Then put the whole works back together—refilling the pan with oil, natch.

Some M48's have the early-type Donaldson air cleaners. This has only the narrow band to hold the oil-bath pan on. It's all right until you get to slammin' over rough ground, or when she backfires. You may find the pan lying in a dirty puddle on the floor plates—and unfiltered air going into the engine.

Some of the keen lads at Fort Knox have been hitching a couple of bolts to the air-cleaner frame and putting a piece of strap iron under the pan, fastening it in place with wing nuts. It cured their problem.

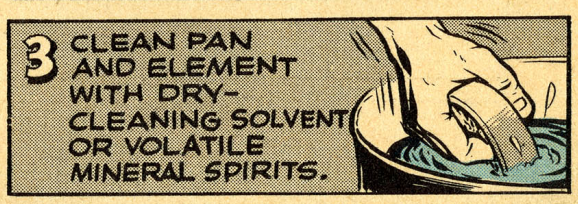


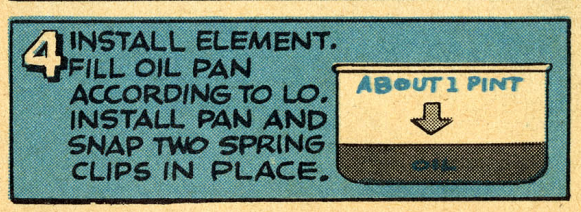
O'course, if you've got the later model cleaner with the cables and clamps holding the pan in place, you're OK.



Your M48 may have either of two types of air-cleaner access doors. On early models the door's mounted on a plate which is held to the bulkhead by cap screws and cleats. Later models have the same door mounted directly in the bulkhead. To service the cleaners on either model, y'loosen the locking handles and swing the door outward.

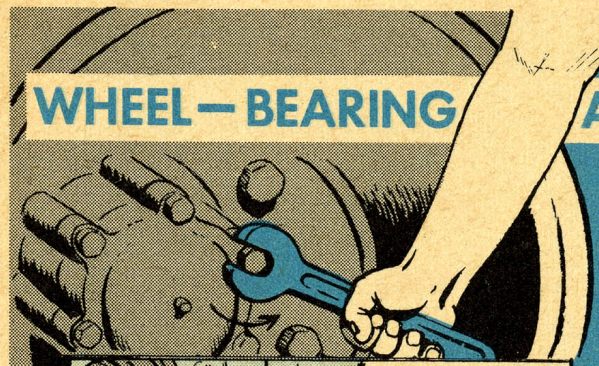
The auxiliary-engine air cleaner is on the right side of the hull, and y'get at it from the turret basket. This item holds about a pint of oil—and should be kept filled and cleaned like the TM says.

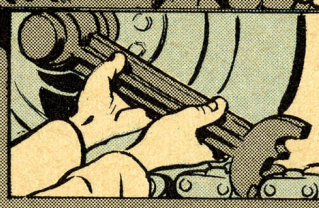




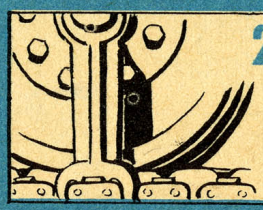
WHEEL—BEARING ADJUSTMENT

So you'd like the word on adjusting roadwheel bearings on the M48 tank? OK, here 'tis:



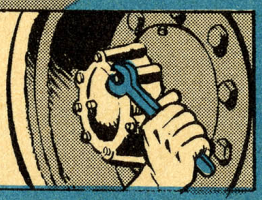


1 INSTALL ROAD-WHEEL LIFTER.

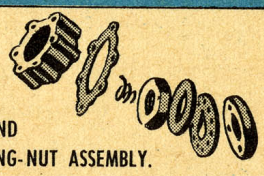


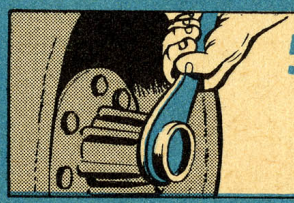
2 DRIVE TANK FORWARD. BOTH ENDS OF LIFTER MUST ENGAGE TRACK. STOP WHEN LIFTER IS VERTICAL.

3 DRAIN OIL FROM HUB — MAKE SURE WHEEL IS NOT TOUCHING CENTER GUIDE.



4 REMOVE HUB CAP, GASKET, STATIC GROUND SPRING AND COMPLETE ADJUSTING-NUT ASSEMBLY.

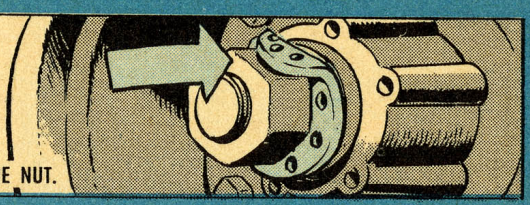




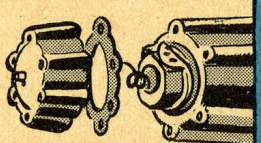
5 INSTALL ADJUSTING NUT. TIGHTEN WITH SPANNER WRENCH UNTIL HUB BINDS.

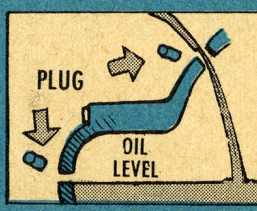
6 BACK OFF NUT, TIGHTEN SNUGLY WHILE ROTATING HUB. BACK OFF 1/6 TO 1/4 TURN.

7 INSTALL ADJUSTING-NUT LOCK RING (THAT'S THE WASHER WITH THE HOLES) AND FOLLOW WITH THE FLAT WASHER AND JAM NUT; TIGHTEN JAM NUT SECURELY THEN LOCK THE NUT IN PLACE—BY BENDING THE WASHER OVER ONE OF THE FLATS OF THE NUT.



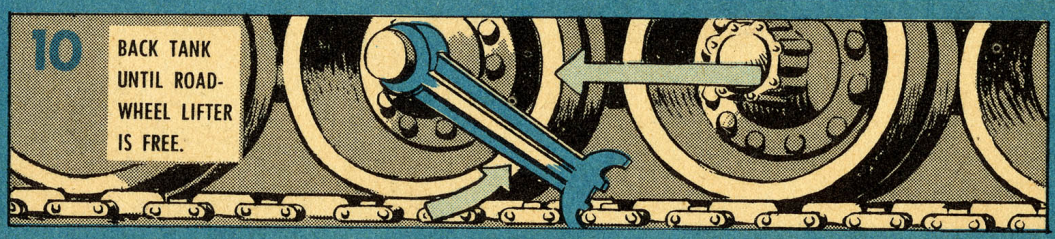
8 INSTALL STATIC SPRING, GASKET AND HUB CAP.





9 REFILL WITH OIL LIKE LO SAYS

10 BACK TANK UNTIL ROAD-WHEEL LIFTER IS FREE.



TORSION—BAR POINTERS

SINCE THE M48 TANK USES FOUR DIFFERENT TORSION BARS, NATCH'LY THEY'RE MARKED ON THE ENDS WITH ARROWS AND PART NUMBERS FOR IDENTIFICATION.

ROADWHEEL

The bars installed from the right side have the clockwise arrows and come under Ord Stock No. G226-7035899. The left side bars, Ord Stock No. G226-7035900, have the counter-clockwise arrows. That's on the roadwheel.

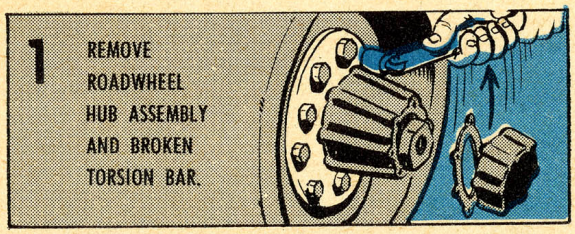
TENSION IDLER

The tension idler (on later 48's) takes a smaller portion bar. It gets Ord Stock No. G256-7379578 (with clockwise arrow) for the right side, Ord Stock No. G256-7379578 (counter-clockwise arrow) for the left.

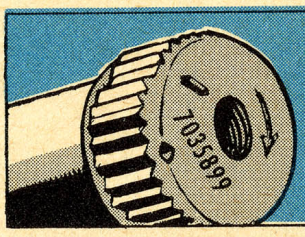
It's been SOP on some tanks to change the anchor plug when replacing a broken torsion bar. But—not so with the M48. You replace these anchors only if the bar failure occurs at the splines.

The anchor comes out the top. To get at it y'gotta either remove the power pack and fuel tanks, or the roadwheel arm and arm housing.

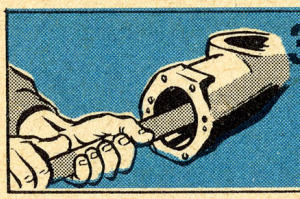
Here's a rundown on torsion bar replacement:



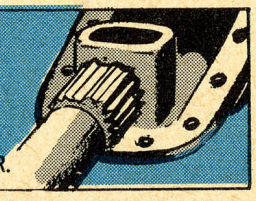
1 REMOVE ROADWHEEL HUB ASSEMBLY AND BROKEN TORSION BAR.



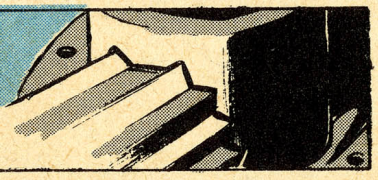
2 CHECK YOUR REPLACEMENT BAR... MAKE SURE YOU'VE GOT THE RIGHT ONE.



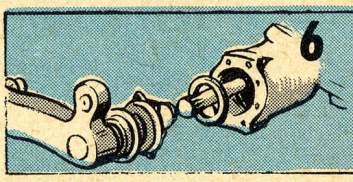
3 GREASE BAR SPLINES AT EACH END. SHOVE BAR THROUGH ARM SUPPORT HOUSING.



4 TURN BAR SO ITS INNER SPLINE SMOOTH (BLANK) TOOTH IS UP AND LINED UP WITH THE ANCHOR.

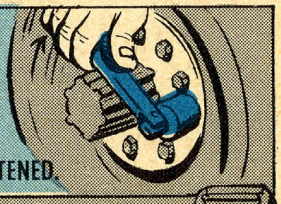


5 PUSH BAR LIGHTLY UNTIL THE SERRATIONS JUST MEET.



6 RAISE ROAD ARM TILL SMOOTH TOOTH LINES UP WITH BAR'S OUTER SERRATION.

7 IT'LL SLIP HOME WITH A PUSH OF THE HAND. A LIGHT TAP ON BAR WITH PIECE OF WOOD MAY BE NECESSARY. DON'T FORCE BAR INTO ANCHOR. IT MAY NOT BE ALINED OR ANCHOR SPLINES ARE DAMAGED.

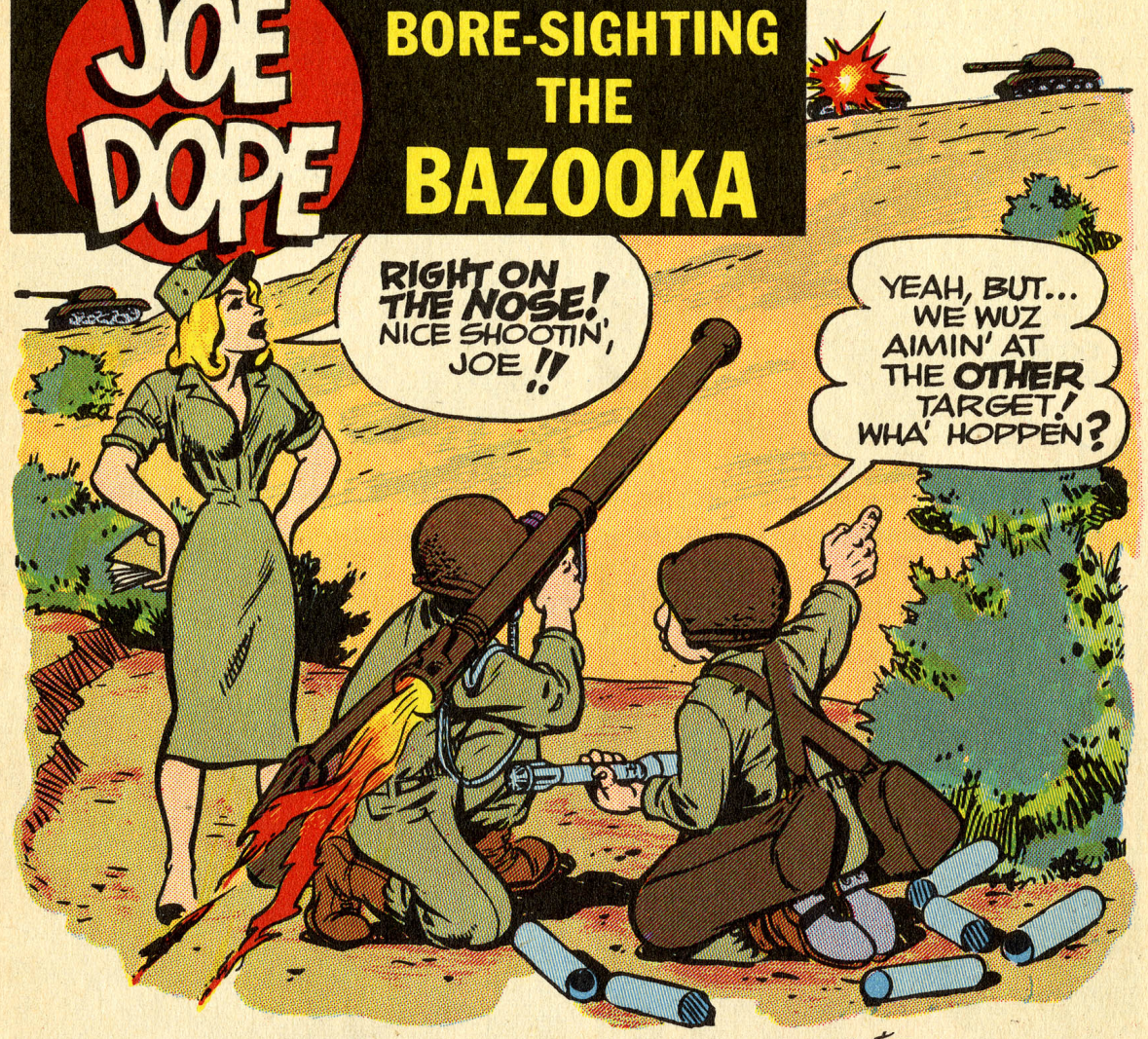


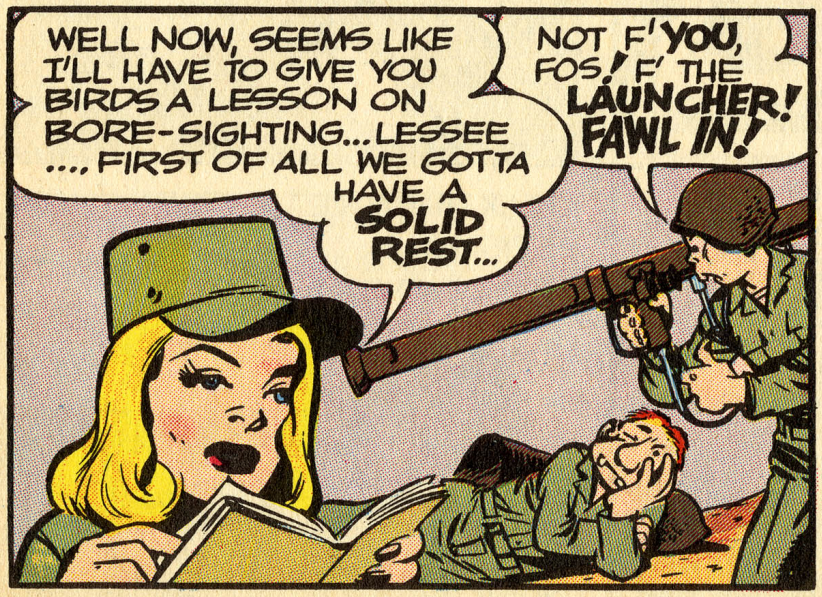
8 WHEN BAR'S IN PLACE KEEP SUSPENSION ARMS SUPPORTED TILL CAP AND BOLTS ARE TIGHTENED.

A TORSION BAR IS A SPRING; SCRATCH IT, BURR IT, SCAR IT—AND YOU'LL BE REPLACING IT 'FORE THE BUGGY GETS OUTA LEFT FIELD.

JOE DOPE

BORE-SIGHTING THE BAZOOKA





YOU USERS GOT ONLY ONE WAY TO BORE-SIGHT A ROCKET LAUNCHER—

THE "DISTANT-TARGET" METHOD

SET LAUNCHER ON RACK OR IN SOME FIRM POSITION FACING **DOWN** RANGE.

WING NUT TO RAISE OR LOWER PIECE.

THIS IS A CONVENIENCE, NOT A NECESSITY.

NOW YOU STRETCH TWO STRINGS ACROSS THE **BORE-SIGHT SCORE MARKS** ON RIM OF YOUR MUZZLE DEFLECTOR.... THESE ARE YOUR BORE-SIGHT CROSS-STRINGS.

THEN INSERT WOODEN DISK FROM AMMO CONTAINER INTO **BREECH END** FOR YOUR BORE-SIGHT PLUG.

GET ONE WITH 1/8" PEEP HOLE

LINE UP YOUR SIGHTS

1 SIGHT THRU **PEEP-HOLE**...

2 SIGHT THRU **REFLECTING SIGHT ASSEMBLY**

ALL LINED UP DEAD ON? GLANCE AT ELEVATION PLATE — POINTER SHOULD BE ON **TO.** IF IT ISN'T—LOOSEN TWO SCREWS AND SLIP **ELEVATION PLATE** TILL INDICATOR POINTS AT **TO.** TIGHTEN UP.

DON'T MOVE LAUNCHER OR YOU'LL HAVE TO START FROM SCRATCH.

CHECK THRU BORE PEEP-HOLE . . STILL DEAD ON?

THEN REMOVE FRONT BARREL FROM REAR PIECE AND

YOU USERS GOT ONLY ONE WAY TO BORE-SIGHT A ROCKET LAUNCHER—

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AIN'T NO SCORE MARKS ON THIS RIM!

1500 YARDS AT LEAST

IN THAT CASE, DIVIDE RIM IN QUARTERS . . . SCRATCH A MARK . . . AND TIE CROSS-STRINGS ACROSS OPENING . . .

12 O'CLOCK

9

3

6

THEN INSERT WOODEN DISK FROM AMMO CONTAINER INTO **BREECH END** FOR YOUR BORE-SIGHT PLUG.

GET ONE WITH 1/8" PEEP HOLE

LINE UP YOUR SIGHTS

1 SIGHT THRU **PEEP-HOLE** . . .

2 SIGHT THRU **REFLECTING SIGHT ASSEMBLY**

LIKE THIS

ALINE LAUNCHER SO TARGET'S DEAD ON INTERSECTION OF CROSS-STRINGS, THEN SEE THAT SHE DOES NOT MOVE.

ADJUST SIGHT SO TARGET LINES UP AT "O" VERTICAL CENTER LINE.

0 100 200 300 400

TO MOVE SIGHT SIDEWAYS — LOOSEN HINGE STUD-NUT. TURN HINGE STUD TILL IT'S SMACK ON TARGET . . . THEN TIGHTEN.

TO MOVE UP AND DOWN — JUST SWING SIGHT

DON'T MOVE LAUNCHER OR YOU'LL GOOF

ALL LINED UP DEAD ON? GLANCE AT ELEVATION PLATE — POINTER SHOULD BE ON **TO.** IF IT ISN'T — LOOSEN TWO SCREWS AND SLIP **ELEVATION PLATE** TILL INDICATOR POINTS AT **TO.** TIGHTEN UP.

DON'T MOVE LAUNCHER OR YOU'LL HAVE TO START FROM SCRATCH.

CHECK THRU BORE PEEP-HOLE . . STILL DEAD ON?

THEN REMOVE FRONT BARREL FROM REAR PIECE AND

TURN TO NEXT LOCK POSITION . . . LOCK TIGHT . . . AND CHECK BORE-SIGHT AT EACH LOCK POSITION.

IF IT'S NOT **DEAD-ON** IN ANY POSITION . . . IT'S A HEY-NONNY-NONNY AND OFF WE GO TO **ORDNANCE,** LADS, THASSALL.

AIN'T NO SCORE MARKS ON THIS RIM!

1500 YARDS AT LEAST

IN THAT CASE, DIVIDE RIM IN QUARTERS . . . SCRATCH A MARK . . AND TIE CROSS-STRINGS ACROSS OPENING . . .

12 O'CLOCK

9

3

6

LIKE THIS

ALINE LAUNCHER SO TARGET'S DEAD ON INTERSECTION OF CROSS-STRINGS, THEN SEE THAT SHE DOES NOT MOVE.

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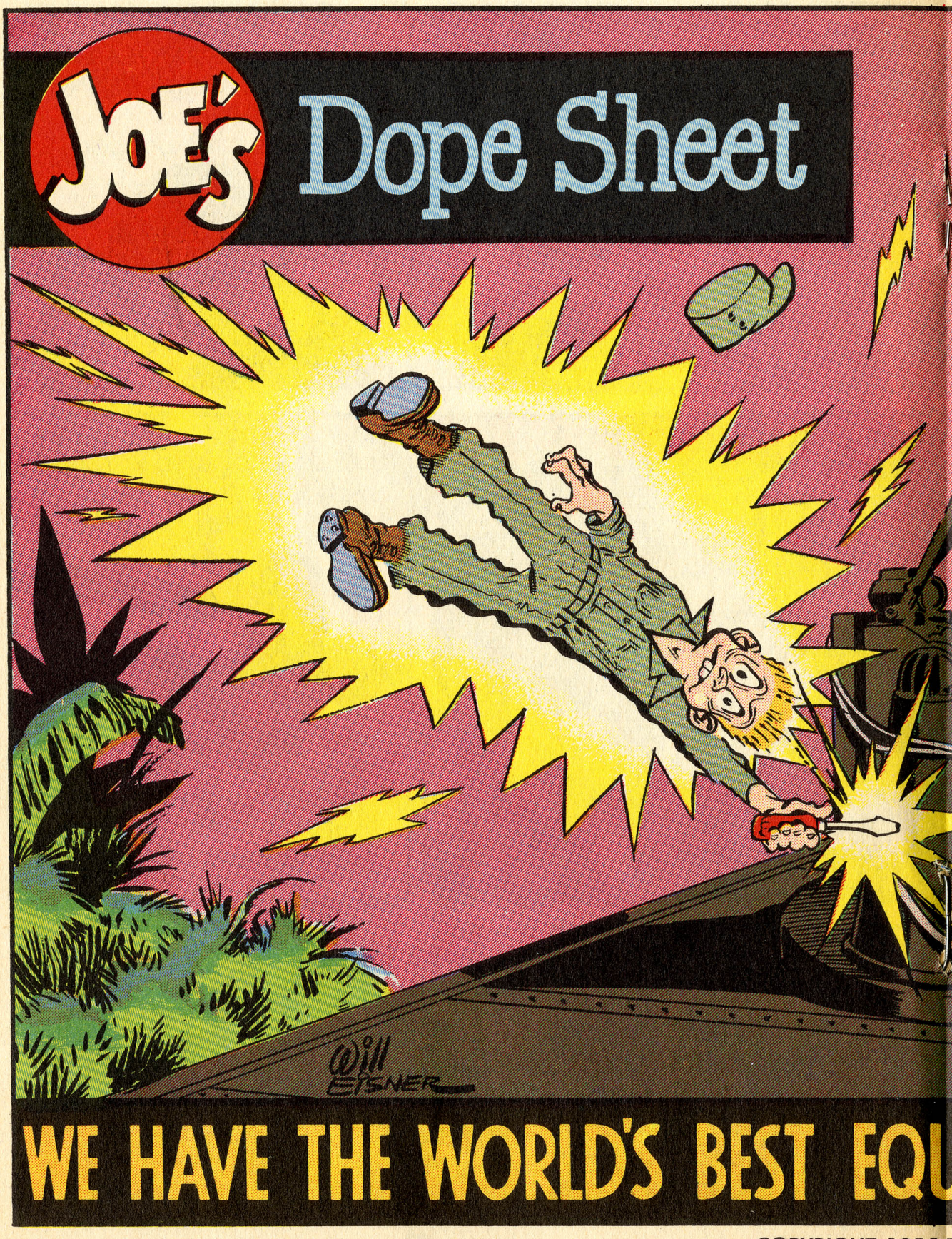

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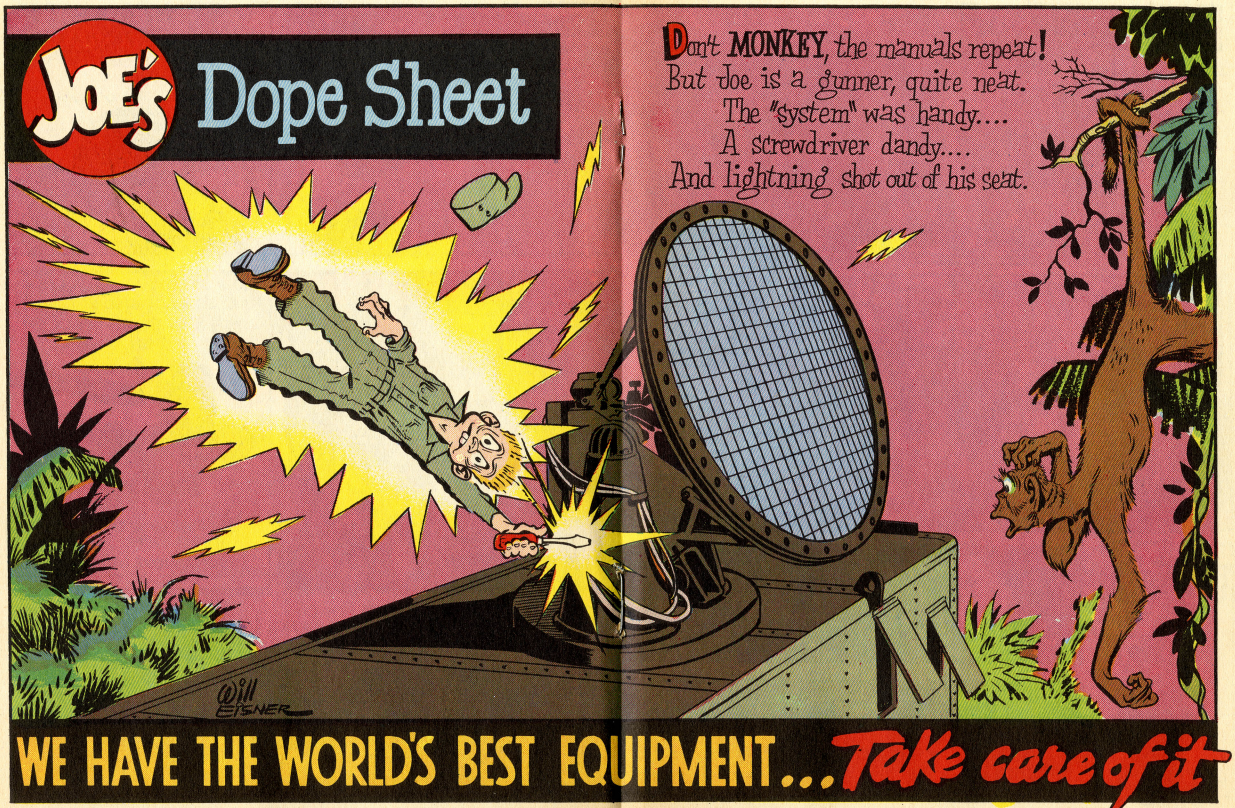


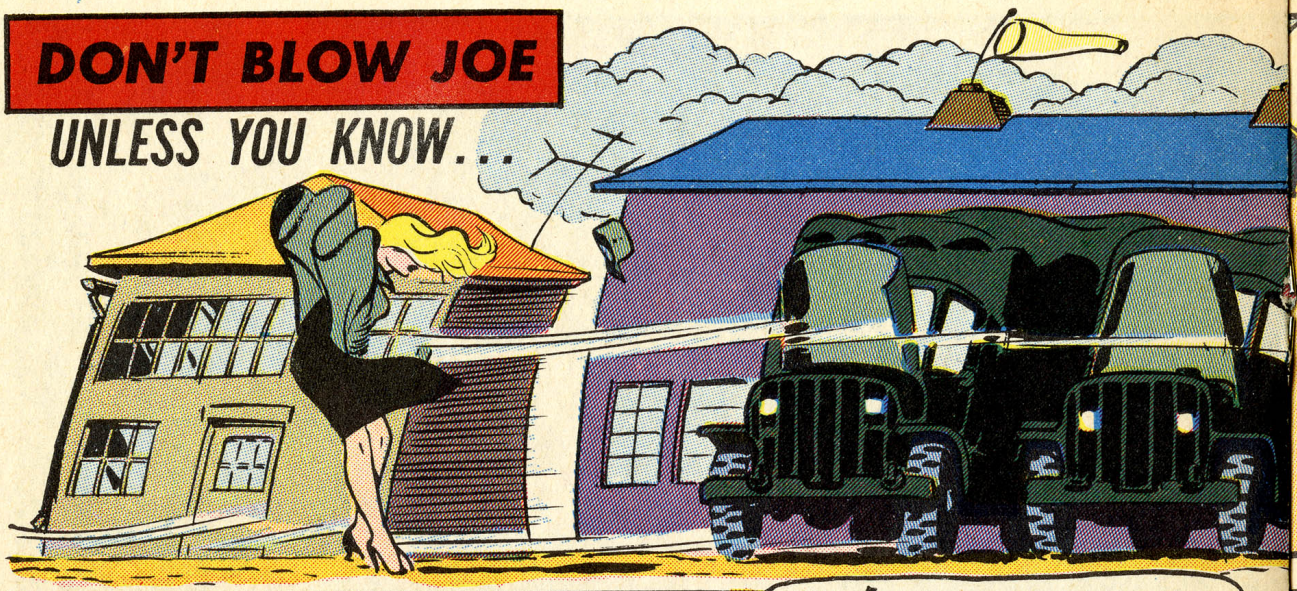
COPYRIGHT 1955 BY WILL EISNER

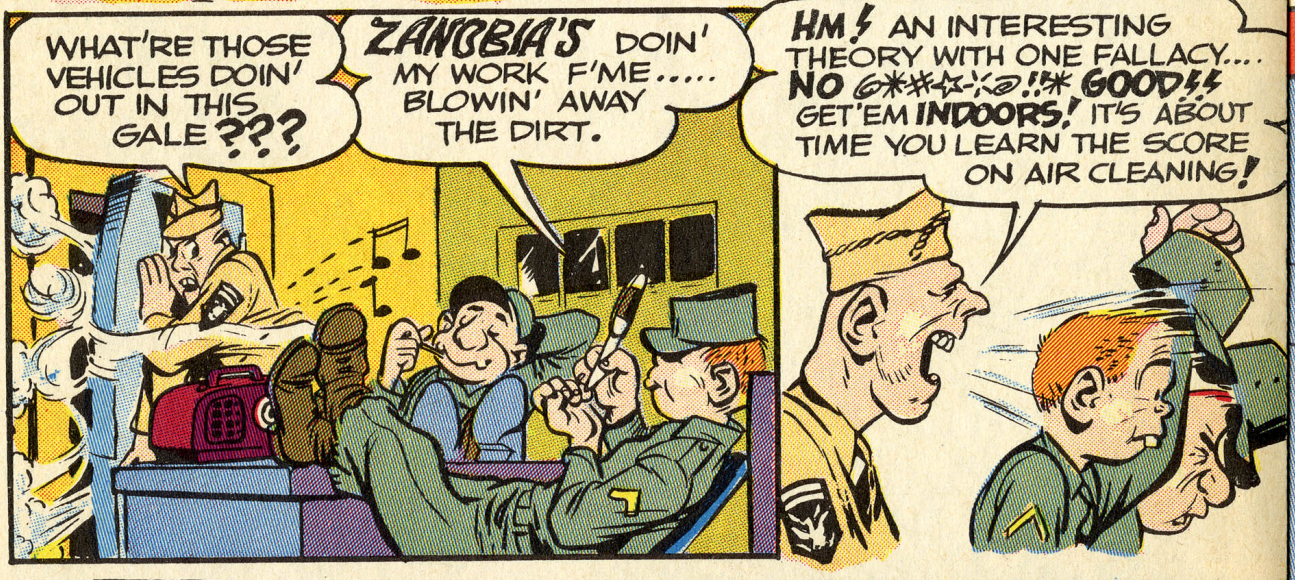
UIPMENT...Take care of it

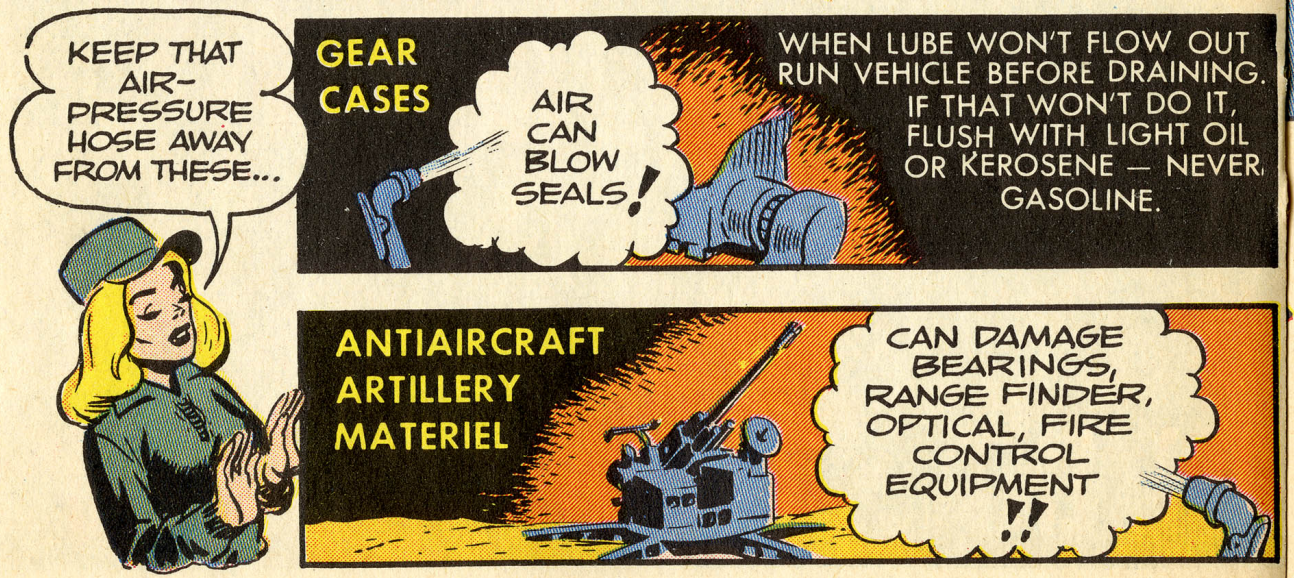
BY WILL EISNER

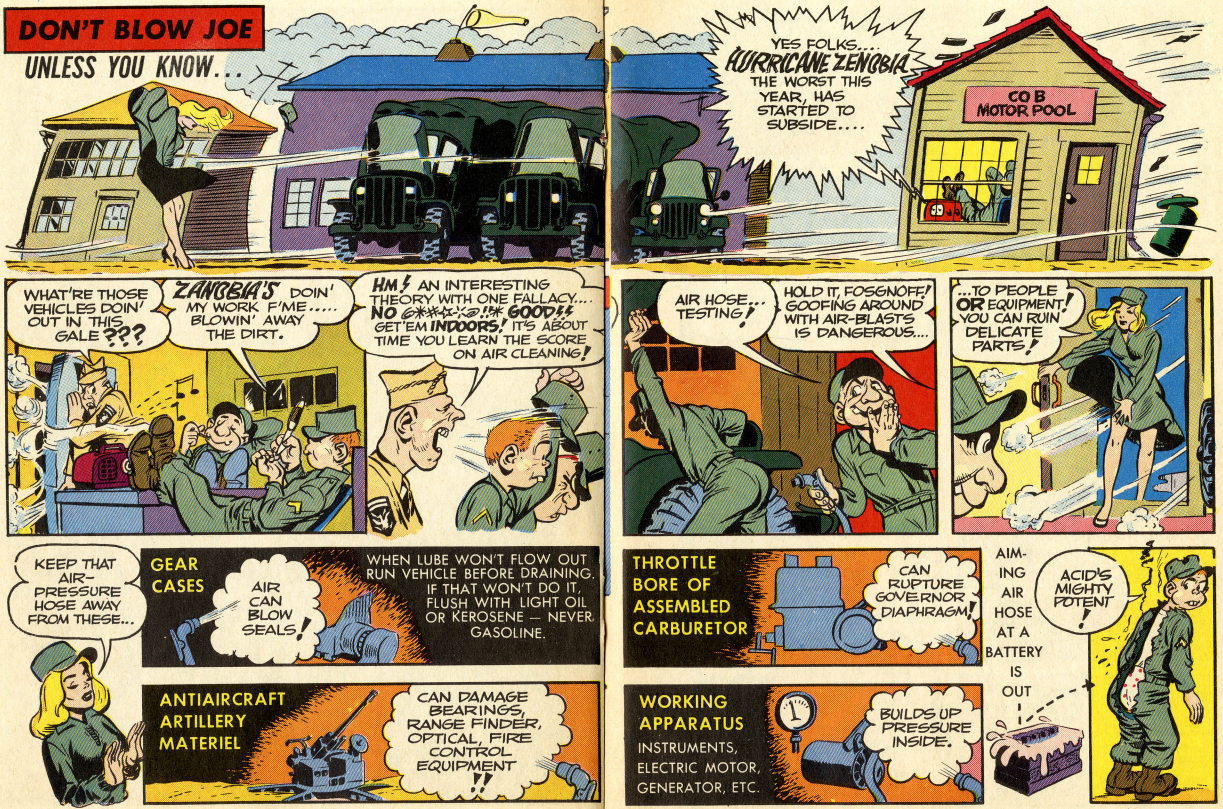
DON'T BLOW JOE

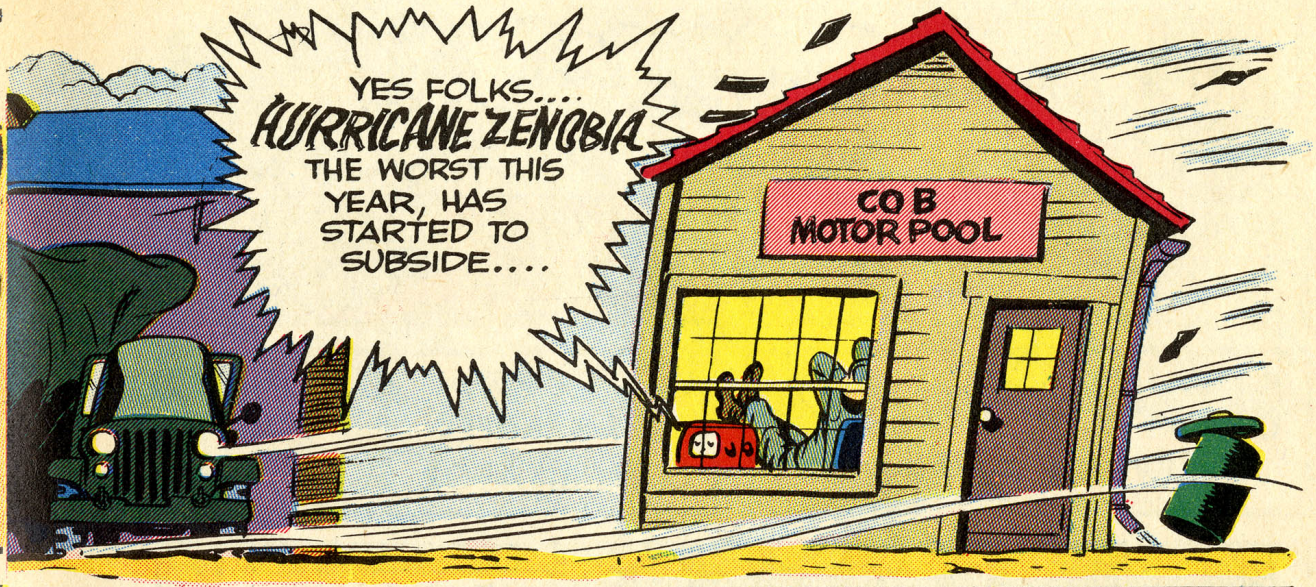
UNLESS YOU KNOW...

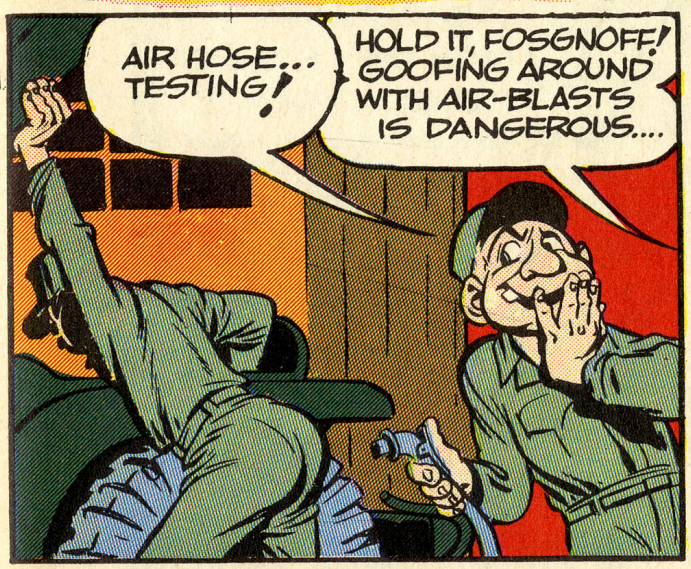




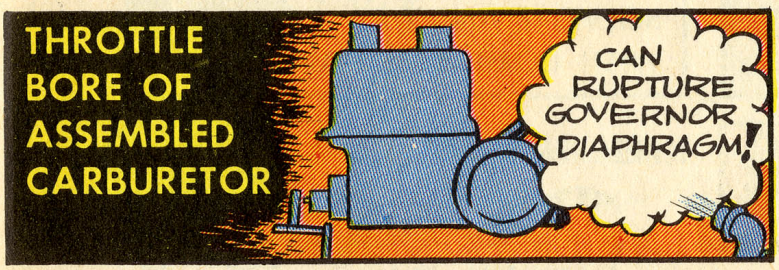


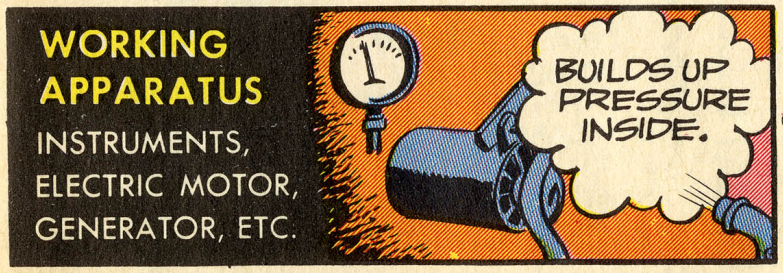

DON'T BLOW JOE
UNLESS YOU KNOW...
YES FOLKS... HURRICANE ZENOBIA THE WORST THIS YEAR, HAS STARTED TO SUBSIDE....
CO B MOTOR POOL
WHAT'RE THOSE VEHICLES DOIN' OUT IN THIS GALE???
ZANOBIA'S DOIN' MY WORK F'ME..... BLOWIN' AWAY THE DIRT.
HM! AN INTERESTING THEORY WITH ONE FALLACY.... NO @*#☆☆@!!* GOOD!! GET'EM INDOORS! IT'S ABOUT TIME YOU LEARN THE SCORE ON AIR CLEANING!
AIR HOSE... TESTING!
HOLD IT, FOSGNOFF! GOOFING AROUND WITH AIR-BLASTS IS DANGEROUS....
...TO PEOPLE OR EQUIPMENT! YOU CAN RUIN DELICATE PARTS!
KEEP THAT AIR-PRESSURE HOSE AWAY FROM THESE...
GEAR CASES
AIR CAN BLOW SEALS!
WHEN LUBE WON'T FLOW OUT RUN VEHICLE BEFORE DRAINING. IF THAT WON'T DO IT, FLUSH WITH LIGHT OIL OR KEROSENE — NEVER GASOLINE.
ANTIAIRCRAFT ARTILLERY MATERIEL
CAN DAMAGE BEARINGS, RANGE FINDER, OPTICAL, FIRE CONTROL EQUIPMENT!!
THROTTLE BORE OF ASSEMBLED CARBURETOR
CAN RUPTURE GOVERNOR DIAPHRAGM!
WORKING APPARATUS
INSTRUMENTS, ELECTRIC MOTOR, GENERATOR, ETC.
BUILDS UP PRESSURE INSIDE.
AIMING AIR HOSE AT A BATTERY IS OUT
ACID'S MIGHTY POTENT!

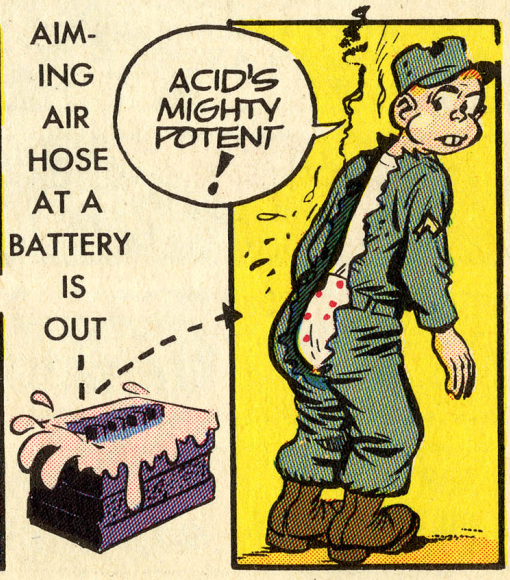

YES FOLKS.... HURRICANE ZENOBIA THE WORST THIS YEAR, HAS STARTED TO SUBSIDE....
CO B MOTOR POOL


AIR HOSE... TESTING!
HOLD IT, FOSGNOFF! GOOFING AROUND WITH AIR-BLASTS IS DANGEROUS....

...TO PEOPLE OR EQUIPMENT! YOU CAN RUIN DELICATE PARTS!

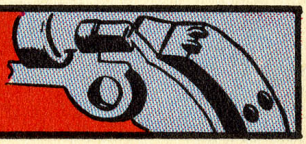

THROTTLE BORE OF ASSEMBLED CARBURETOR
CAN RUPTURE GOVERNOR DIAPHRAGM!


WORKING APPARATUS
INSTRUMENTS, ELECTRIC MOTOR, GENERATOR, ETC.
BUILDS UP PRESSURE INSIDE.

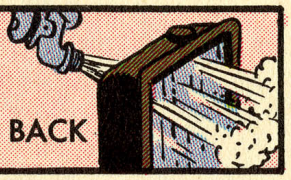

AIM-ING AIR HOSE AT A BATTERY IS OUT
ACID'S MIGHTY POTENT!

SPARKPLUGS . . . GETS RID OF DIRT AND DUST.

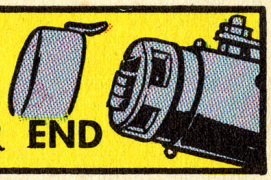
BRAKE SHOE LININGS



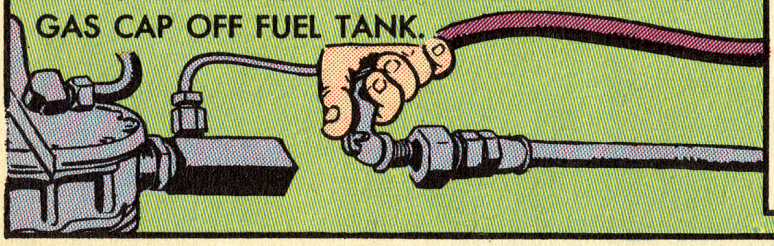
RADIATOR CORE . . . BLOW FROM BACK



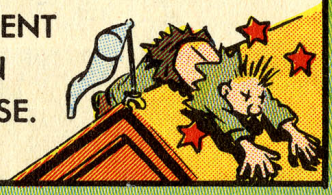
GENERATOR AND STARTER COMMUTATOR END



FUEL LINES . . . BLOW BASSACKWARDS TO NORMAL FLOW—FROM FUEL PUMP BACK TO TANK. **BUT FIRST** DISCONNECT LINE OR TAKE GAS CAP OFF FUEL TANK.



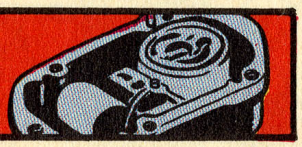
AND KEEP AWAY FROM OPEN FLAME OR ELECTRICAL EQUIPMENT IN USE.



DISTRIBUTOR . . . DUST AND DIRT CAN BE BLOWN FROM CAP . . . REMOVE WICK AND LUBRICATION CUP . . . CLEAN AND DRY. REINSTALL AND TIME AFTER ASSEMBLY IS CLEAN AND BLOWN DRY.

BREAKERPLATE ASSEMBLY (REMOVE DISTRIBUTOR CAP) CLEAN WITH DRY-CLEANING SOLVENT AND DRY WITH COMPRESSED AIR.

MAGNETOS



GAS FILTER ELEMENT

AIR MAZE FILTER DISKS

KEEP IN MIND

BEAD CLIPS

Dear Half-Mast,

What's the story on those bead clips? Do we use them, or don't we?

PFC J. L. D.

Dear PFC J. L. D.,

TB Ord 477 is being revised and is going to do away with those bead clips —little by little. The clips will stay on until for some reason you change a tire; then they'll come off and be left off.

In the meantime, until the TB does come out, you'd better ask your Ordnance officer if he wants them put back on or left off when you change your tires.

Half-Mast

LO AND BEHOLD

Dear Half-Mast,

I know that it is a common practice to send artillery to Ordnance maintenance every six months, but can you tell me what authority is used?

Lt Col R. F. T.

Dear Colonel R. F. T.,

That's old stuff. Sending artillery to Ordnance every six months is a hold-over from old-type lube orders which said that certain parts would be lubed semi-annually by Ordnance personnel.

Here's what new-type lube orders say: "Lubricated at time of disassembly by Ordnance personnel." And SR 750-105-10 (Apr 54) says that "as a **minimum,** every item of Ordnance equipment in the hands of troops will be inspected by qualified Ordnance personnel once a year."

The inspector is the man who decides whether your equipment goes to an Ordnance shop. He'll tell you whether the work can be done where it is or in an Ordnance shop.

Half-Mast

SQUELCH THAT GIG

Dear Half-Mast,

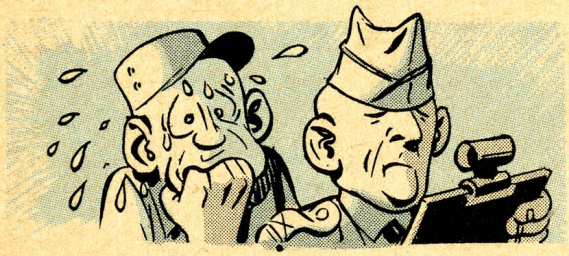
When we requisition parts for our vehicles and don't get the parts, we stick an extra copy of the requisition in the map compartment.

When an inspection is pulled, and we get gigged for the parts that we ordered and didn't get, we pull out the unfilled requisition. The proof then wipes out the gigs. Good idea, don't you think?

CWO H. E. T.

Dear Mister H. E. T.,

You've hit on a morale factor here. Even though an inspector goes to the motor pool after his inspection and checks requisitions against gigs, the average soldier doesn't realize this. He figures he's left holding the gigs.



He's tried to have things kept in shape but he couldn't get the parts to do it. So, he figures there's no use trying if he's going to get gigged anyway. He gets discouraged, and preventive maintenance goes down the drain.

But—wipe the gigs out right in front of him and he'll be a happy fella. He'll give you more and better preventive maintenance. You're right on-the-ball.

Half-Mast

ROCKET LAUNCHER ZIP

Dear Half-Mast,

Our TM says the firing mechanism Ord Stock No. B042-7140325 on our M20 and M20B1 3.5-in rocket launchers must have an electrical output of 40-mws. We got several of these mechanisms from stock which did not reach the required 40-mws output, but they did fire the piece. Since less output will fire the rocket, couldn't the minimum required output be lowered?

Lt R. F. M.

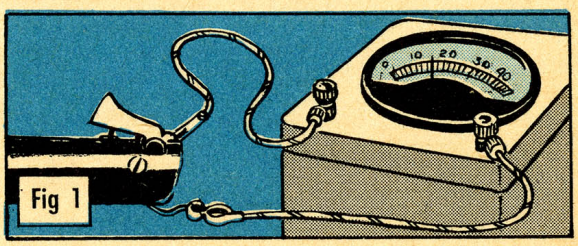
Dear Lt R. F. M.,

If you've got the new high-output firing mechanism (7140325), then here are the limits for rejection of the firing mechanism: Field rejection, below 15-mws; pre-embarkation rejection limits, under 30-mws; overhaul rejection limits, under 40-mws.

The 15-mws output is a current ratio of about two-to-one required to actually fire the rocket. That 15-mws gives you enough reserve to make sure that your launcher will fire in all kinds of weather.

So, on firing mechanisms, in the field replace it if its output is below 15-mws.

You might want to dig up Change 2 (12 Oct 54) to TM 9-2002 for the complete story (Fig 1).



Half-Mast

SCREWY PASSAGE

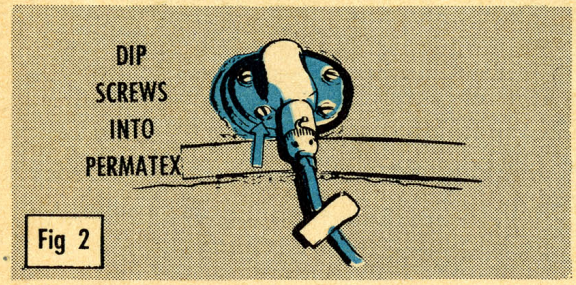
Dear Half-Mast,

In spite of all we do, our M38A1's gas tank leaks where the fuel gage sending-unit attaches to the tank. We've replaced the neoprene gasket, sealed around the unit with permatex and even soldered one plate down. The solder job held until vibration broke it loose. Have you had any experience with this?

Cpl J. A. L.

Dear Cpl J. A. L.,

Yep, I have. From what I've seen, the fuel comes from around the screw threads holding the sending-unit to the tank. By dipping the screws in permatex (Fig 2), as well as putting the stuff around the unit, you should stop the



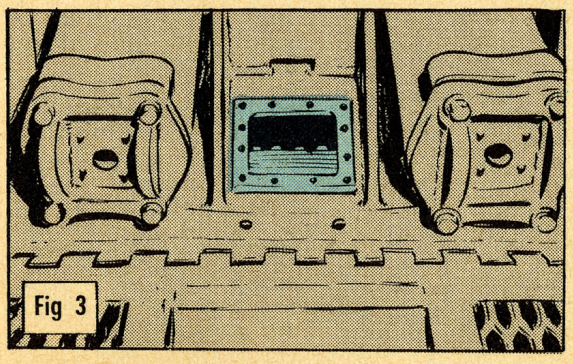
leak. But before you do that, check the unit's gasket and make sure it's not damaged. If it is, replace it with a new one.

Half-Mast

DIAPERS FOR 90-MM'S

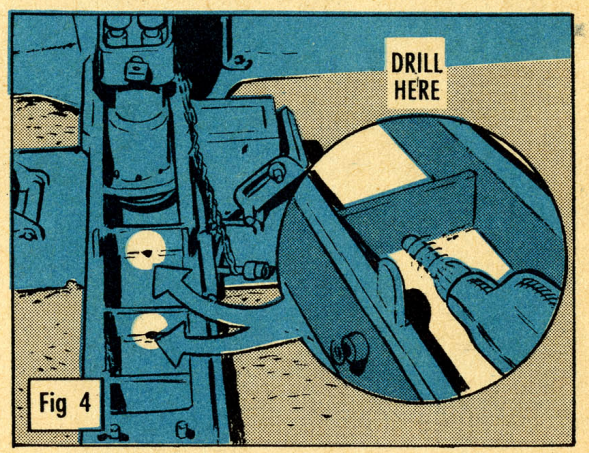
Dear Half-Mast,

We've been having a heck of a time getting the water out of the ribbing in the leveling sockets of the traversing mechanism on our 90-mm AA guns. There're 10 of these compartments (Fig 3) and we have to sop each one out with rags every time we get a good rain.



What do you say about drilling a hole in each of the compartments to let the water drain out? Also, water won't drain out of the outriggers (Fig 4) like it should and we have to sop them out too. Whatcha say?

Sgt J. S. B.



Dear Sgt J. S. B.,

It's a mean situation, all right, but you won't have to worry about it long. The next time your piece goes to Ordnance for a check-up they'll drill those holes for you. As for the outriggers, MWO Ord D38-W11 should've taken care of that. Check your gun book to see if it has been applied.

If you've got other drainage problems send in a UER on them—and in the meanwhile speak to your Ordnance officer. He's the local doctor on the case, he may have a temporary field fix in mind.

Half-Mast

SHEAR-PIN SUBSTITUTE

Dear Half-Mast,

When your last shear-pin's shot. . . . whaddya do?

PFC J. S. K.

Dear PFC J. S. K.,

Simple. Easy. Punch out wot remains of shear-pin. Cut it in two. Put one half in, insert a short wood dowel, and on top of this put the other half. Put tape around outside holes to keep ends of shear-pin from dropping out (Fig 4).

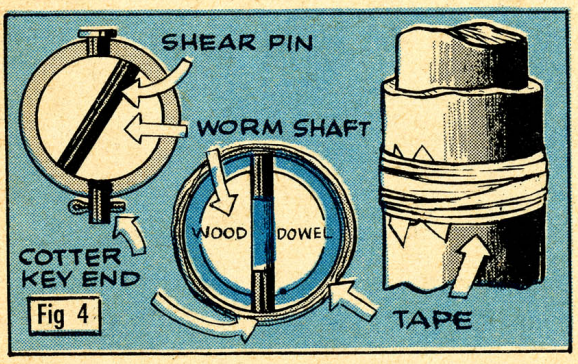


Fig 4

Strictly an emergency deal, y'know. But, when you gotta have a winch . . . you just gotta.

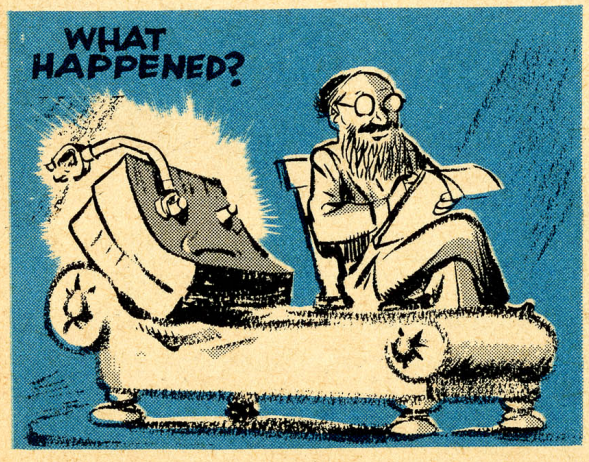
Half-Mast

CONFUSED BATTERY

Dear Half-Mast,

I received a new battery with five cells charged in one direction and the other one fully charged in the opposite direction. What happened?

Sgt T. H. S.



Dear Sgt T. H. S.,

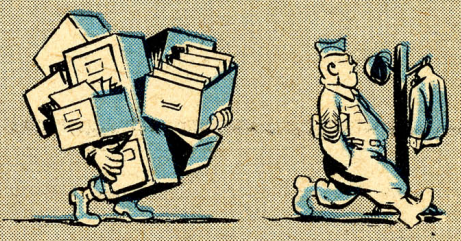
It could happen—once in a million times. You see, since the services buy so many dry-charged batteries for long term storage and shipping, the manufacturers make 'em all the same way. The cells are put together and charged before the battery is assembled.

So, it's just possible that someone along the line got one cell in backwards. It would have to get by both the manufacturer and Ordnance inspectors to be shipped out. However it does sound like one did slip by.

Turn in your mixed-up battery with an Unsatisfactory Equipment Report and the supply people will give you a good one.

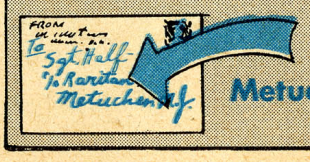
Half-Mast

SGT HALF-MAST HAS MOVED



Sgt Half-Mast, Connie Rodd—in fact, the whole PS Magazine staff—have been shipped to a new post—Raritan Arsenal, New Jersey.

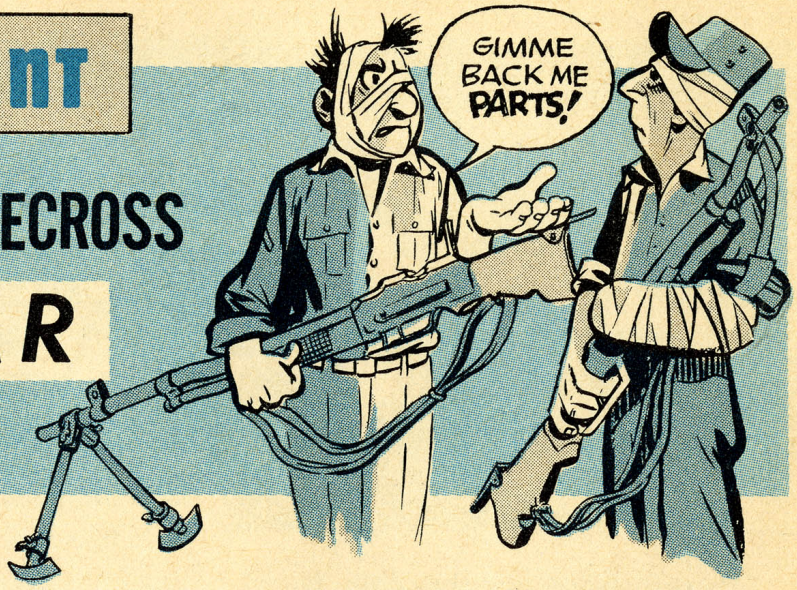
So, when you've got something for Half-Mast, or if you want to ask Connie some question or other, be sure to address your letter to them in care of—



PS Magazine
Raritan Arsenal
Metuchen, New Jersey

ARMAMENT

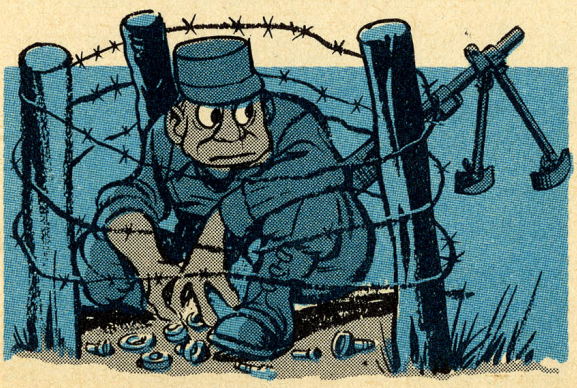
DON'T DOUBLECROSS YOUR BAR



Like they tell you in the mess hall, a long, graspin' reach can gettcha nothing but a fist-full of trouble. 'Specially when you're reaching for what the other man's got—like the bolt off his Browning Automatic Rifle.

Swapping parts—by mistake or otherwise—is strictly for the birds. Sure, the parts look alike—and for most purposes they are. But they work best in the BAR they come with. So it's to your advantage to keep 'em there.

The same thing applies to parts for rifles, machine guns, pistols and carbines. Keep a close eye and a tight fist on your own parts and tell your buddy to do likewise. Leave the swapping up to Ordnance—and horse traders.



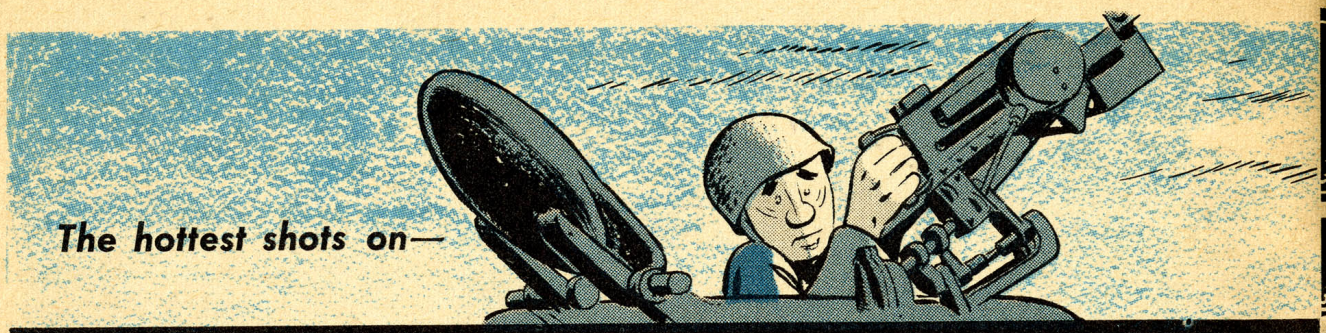
New Gas-Cylinder Assembly

With the new type gas-cylinder assembly, regulating the gas pressure is simple as screwing the regulator to the right position. If your rifle becomes sluggish when the smallest gas port is used, turn to a larger port. But first make sure carbon and dirt are not fouling you up. Take it apart and clean it like it tells you in PS 18. (If you don't have a copy, write Sgt Half-Mast, PS Magazine, Raritan Arsenal, Metuchen, N. J., and ask for one.)

Bent Magazines

It just stands to reason that your BAR'll go to seed if she's not got that feed. A worn or bent magazine will put your weapon on a starvation diet quicker'n anything else. Avoid using beat-up magazines. If you can't fix 'em, turn 'em in for better ones.

Keep a sharp eye out, too, for corroded or bent ammunition. Never load any rounds that look like they haven't a bang left in the world. They'll give you more trouble than they're worth.



The hottest shots on—

TANK FIREPOWER

M48 TURRET–MOUNTED .50's

One thing's for sure about the .50-cal. AAA gun on the Chrysler mount:

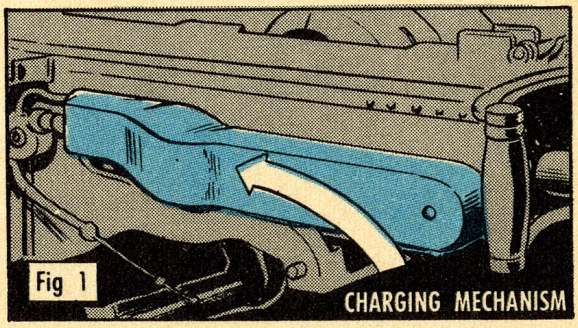
It'll take care of you in a way no other machine gun has ever done before. That is—if everything's on the up and up. Here are a few pointers that'll help you make sure it is:

Charging Mechanism:

You gotta be careful with the remote charging mechanism (Fig 1). It takes about 75 pounds of pressure to charge the gun—and that's a lot of pull. The thing to remember is to pull it—**p-u-l-l** it instead of yankin' it. But first make sure nothing's fouled.

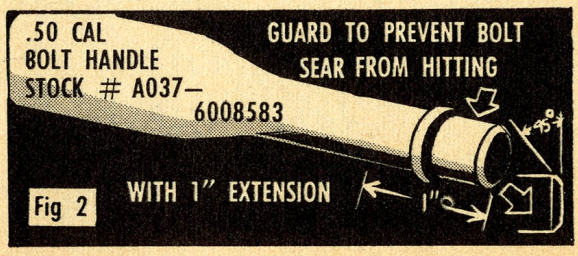
Since you're well protected from small-arms fire down in the turret, take your time in reloading and charging so there'll be little chance for a slip-up. Cause if something goes wrong with your cable, the gun'll have to be charged by the bolt handle. And since it can't be done on the inside, somebody'll have to stick his neck out.

Talkin' about a bolt handle just takes it for granted that you've supplied yourself with some sort of handle in case of an emergency. The ordinary .50-cal. bolt handle is too short for the job so until you get the new and revised handle you can make one out of a 3/8-in rod or



something similar. The diameter should be about 11/32 inch, and it has to be strong enough to do the work without bending.

If you want to get fancy you can always take a .50-cal. handle and weld a 1-in piece on to make it long enough. But while you're doing that be sure to put a guard on it to keep it from going in so far that it hits the sear. Do the same thing with whatever you come up with (Fig 2).



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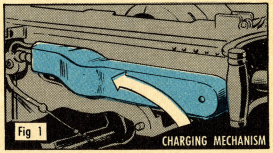

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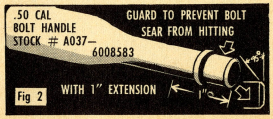
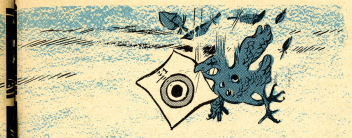


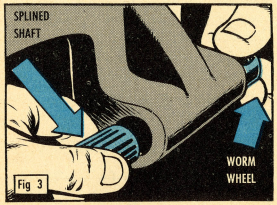


Keep the bolt handle in a safe and handy place and use it as much as possible. It'll save a lot of wear and tear on the charging cable.

Mounting The Mount:

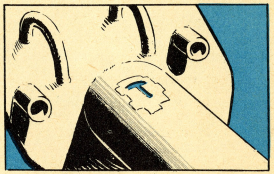
Here's a tip on getting the splined shaft on the gun mount lined up with the worm wheel (Fig 3). Shine a light into the spline hole and rotate the worm wheel until you get the shaft alined with the worm gear.

All you gotta do to remove the spline shaft is place a crowbar under the slot in the center of the shaft, depress the ball pin and push out.



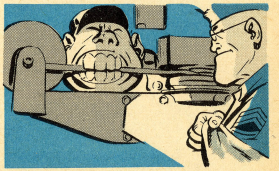
BALANCE POINT

Check your M48 tank gun to see if it has a center-of-gravity mark on it. You'll find a *T* cut into some tubes about six inches in front of the gun shield. If you find one, put some loud paint on it so Ordnance can spot it easy when they want to remove the tube.



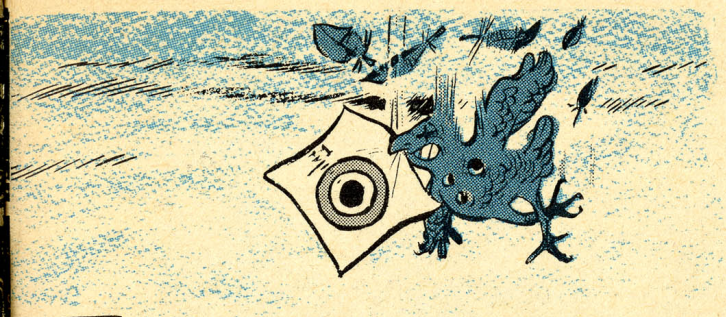
YOUR CABLE ABLE?

You gotta have an able cable (elevation feed-back) if you expect to do any good with the 90-mm gun in your M47 tank. That cable carries a mighty important load and if it ever snaps, you've got trouble.



It shouldn't happen, tho'. . . not if you pet it and pat it now and then to keep it from getting all fouled up. Make sure the cable's riding through the bracket pulley free and easy (Fig 4). If it slips off and snags, it'll break when the pressure's on.

Keep a sharp eye, too, on the way it winds up on the shaft pulley. Could be that the feed-back shaft spring *is* slipping. There's gotta be tension on that



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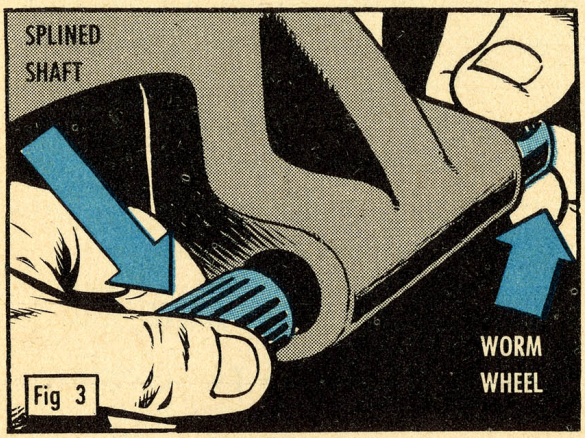

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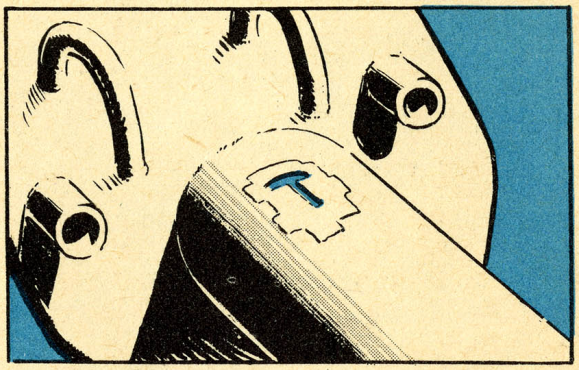
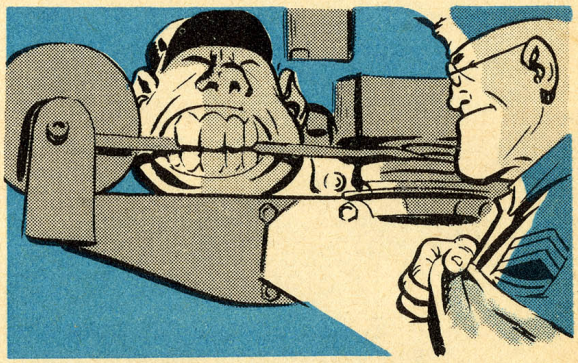
BALANCE POINT

Check your M48 tank gun to see if it has a center-of-gravity mark on it. You'll find a *T* cut into some tubes about six inches in front of the gun shield. If you find one, put some loud paint on it so Ordnance can spot it easy when they want to remove the tube.



YOUR CABLE ABLE?

You gotta have an able cable (elevation feed-back) if you expect to do any good with the 90-mm gun in your M47 tank. That cable carries a mighty important load and if it ever snaps, you've got trouble.

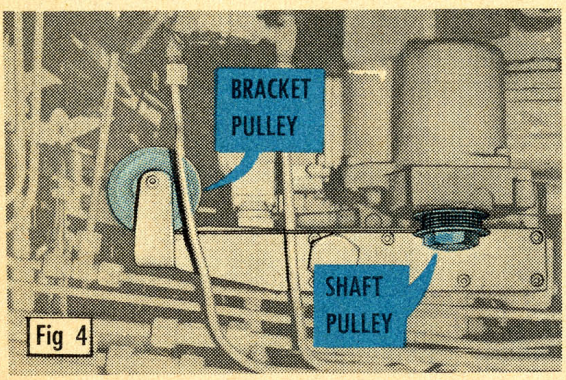


It shouldn't happen, tho'. . . not if you pet it and pat it now and then to keep it from getting all fouled up. Make sure the cable's riding through the bracket pulley free and easy (Fig 4). If it slips off and snags, it'll break when the pressure's on.

Keep a sharp eye, too, on the way it winds up on the shaft pulley. Could be that the feed-back shaft spring is slipping. There's gotta be tension on that

cable at all times; if there isn't something's wrong. Yell for Ordnance.

Never turn on the power if the cable's out of whack or broken. If you do, the



breech may rear mighty fast and bust somethin'.

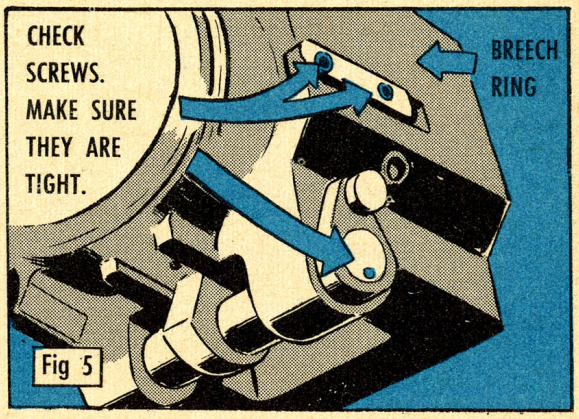
SLACK IN THE BREECH

Been doing a lot of bang-banging with your 76-mm and 90-mm tank guns lately? Better give the breech-ring assembly the once-over the next time the gun is disassembled to see if anything needs rescrewing.

The two socket-head cap-screws (Fig 5) which hold the brass breech-

ring key to the breech ring have a bad habit of working loose when you do lots of firing. Same goes for the two screws on the bottom of the breech-ring lugs which hold the crank and torsion spring-adjustment housing.

Keep a jealous eye on 'em and call Ordnance when they start acting free and loose. They need to be screwed down tight.



OIL THE OILER

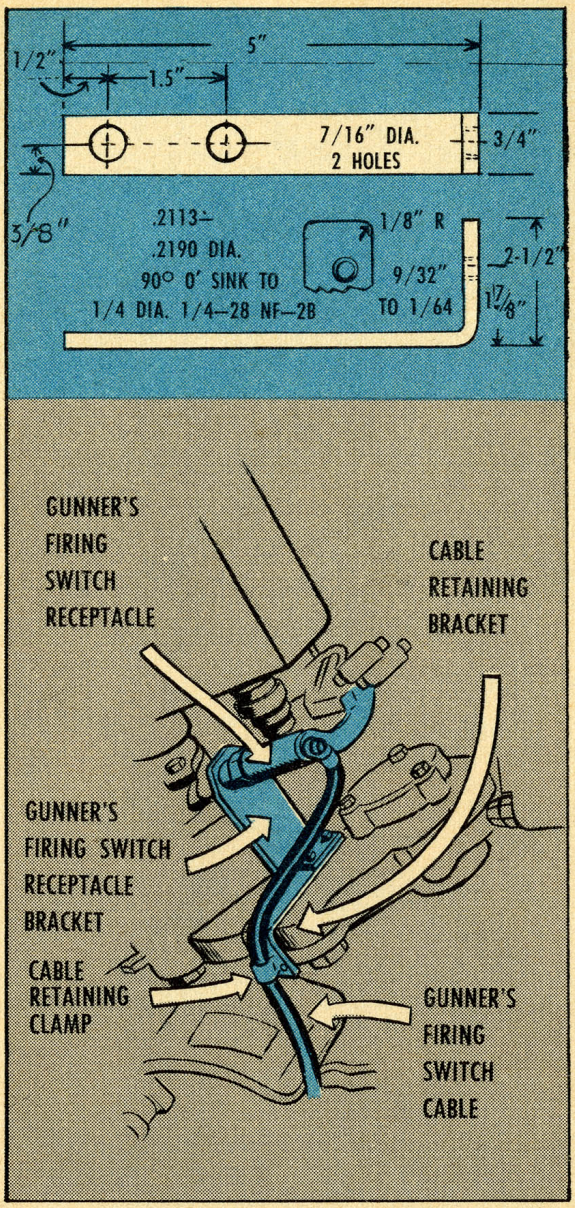
It may surprise you, but your tank gun replenisher-cylinders need to be oiled at least every six months. Otherwise they get corroded inside.

Use an oil spray gun to squirt some preservative lubricant (PL Special, Mil-L-644A) into the two lube holes in the tape-end of the cylinder. Also shoot some into the tape hole. But make sure you clean all the dirt and stuff away from the holes first. This part of the cylinder doesn't benefit from all that oil in the other end.

The same thing applies to spares in supply or storage. Give 'em a going over at least once every six months.

TABLE THAT CABLE

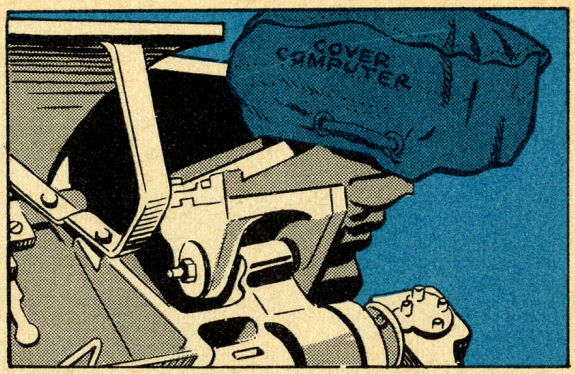
Here's a neat piece for you M41A1 gunners who get your firing switch cable all fouled up behind the elevating handwheel. It's a bracket that'll keep the cable from being snarled and damaged when you work the elevating mechanism. Later models already have 'em.



PROTECT YOUR SIGHT

Always—and that's **always**—remove the canvas which covers the computing head on the M38 computing sight (T154) before traversing the gun mount on that M42 twin-40 ack-ack job. The cover will snag on the revolving bail pointer and play hob with the computing head and flexible drive-shaft.

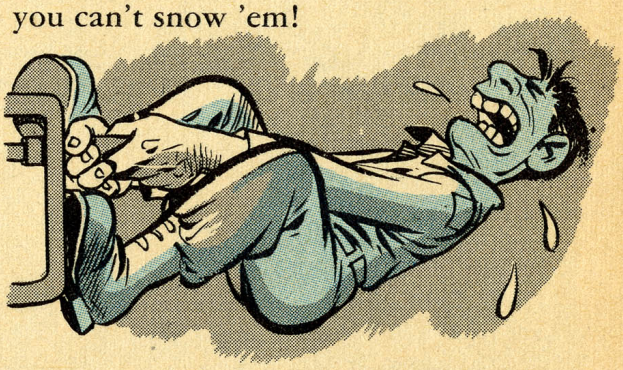
To make sure this doesn't happen, place a tag or stencil near the travel lock



with somethin' like this: **"Warning:** Remove the computing sight cover before traversing by hand or power."

THEY GOTTA BE ENGAGED

One thing's for sure about the oil gear slew-clutches on your M42 twin-40—you can't snow 'em!

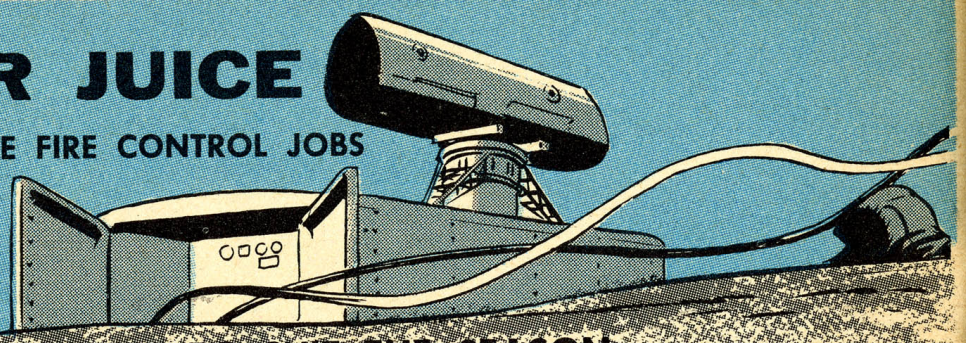


They simply won't put out until they're good and properly engaged. Try to force 'em against their will and what happens? They strip their gears and refuse to budge. And there you stand all hot and bothered, with both guns out of action.

So, if you want to do any good with your mount, make sure the slew clutches are hitting it off OK. Some of the early models come out with insufficient slew-clutch mesh and they may need reworking. If you suspect any trouble with your gears, yell for Ordnance. They can fix 'em up like it shows in Cadillac Service Bulletin No. 148.

TRAILER JUICE

FOR THOSE FIRE CONTROL JOBS

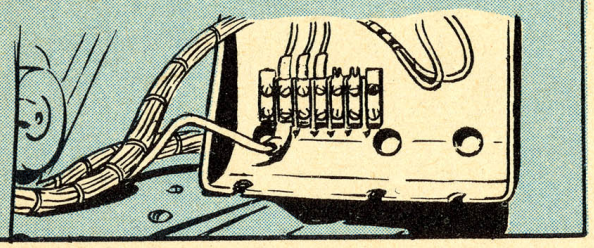


ADJUST THE CHARGE TO SUIT THE SEASON

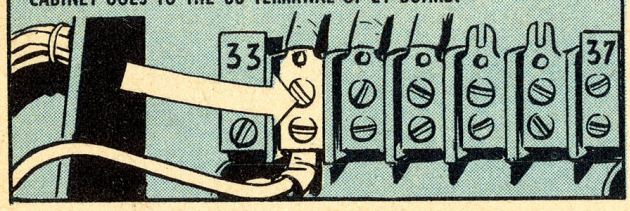
So that you don't overcharge the batteries in your M242 and M244 fire control trailers, you've got to change the charging rate of the charger—come summer—come winter.

TO ADJUST IN YOUR M242:

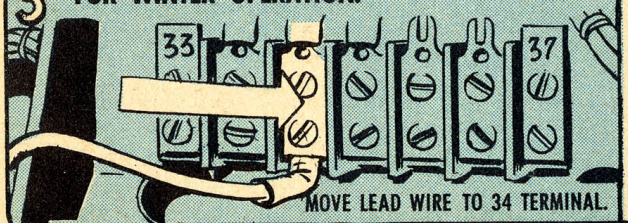
1 TAKE UPPER PANEL OFF HEATER CABINET. LOOSEN THREE SCREWS AT BASE OF BATTERY CHARGER METER PANEL. DON'T TAKE SCREWS OUT. ONE SCREW WILL ACT AS PIVOT FOR PANEL. PULL IT FORWARD FROM LEFT SIDE.



2 FOR SUMMER OPERATION.
WHITE LEAD WIRE FROM E2 TERMINAL BOARD INSIDE HEATER CABINET GOES TO THE 33 TERMINAL OF E1 BOARD.



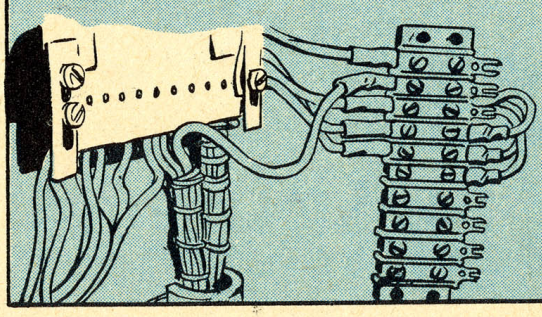
3 FOR WINTER OPERATION.



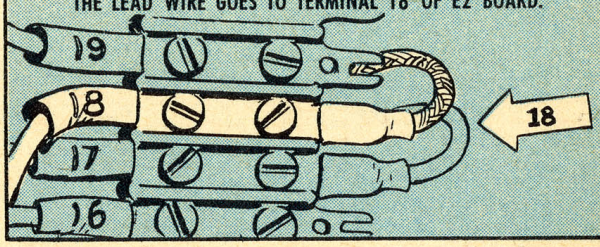
MOVE LEAD WIRE TO 34 TERMINAL.

AND IN THE M244 TRAILER:

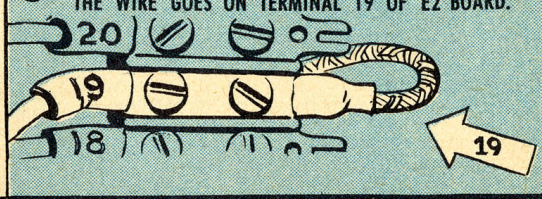
1 THE E2 BOARD IS INSIDE THE COMPARTMENT. LOOSEN TWO DZUS FASTENERS ON METER PANEL AND LOWER PANEL ON ITS HINGE.



2 FOR SUMMER OPERATION.
THE LEAD WIRE GOES TO TERMINAL 18 OF E2 BOARD.



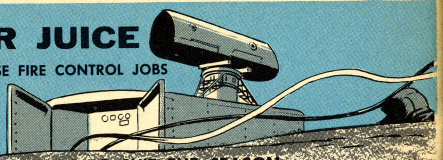
3 FOR WINTER OPERATION.
THE WIRE GOES ON TERMINAL 19 OF E2 BOARD.



MAKE MARKINGS RIGHT ON THE PANEL OF BOTH TRAILERS SO THE NEXT GUY WILL KNOW.

TRAILER JUICE

FOR THOSE FIRE CONTROL JOBS



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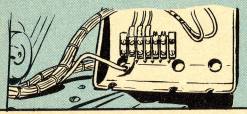

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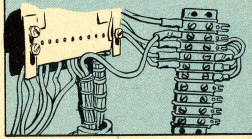
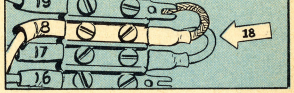
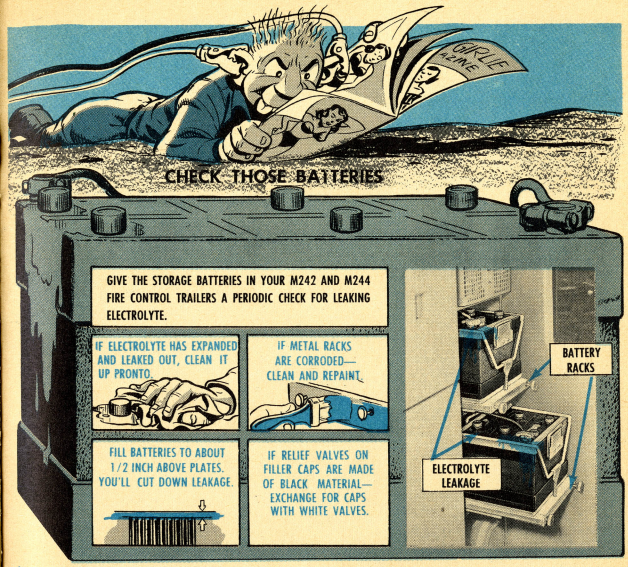


2 FOR SUMMER OPERATION.
THE LEAD WIRE GOES TO TERMINAL 18 OF E2 BOARD.



3 FOR WINTER OPERATION.
THE WIRE GOES ON TERMINAL 19 OF E2 BOARD.

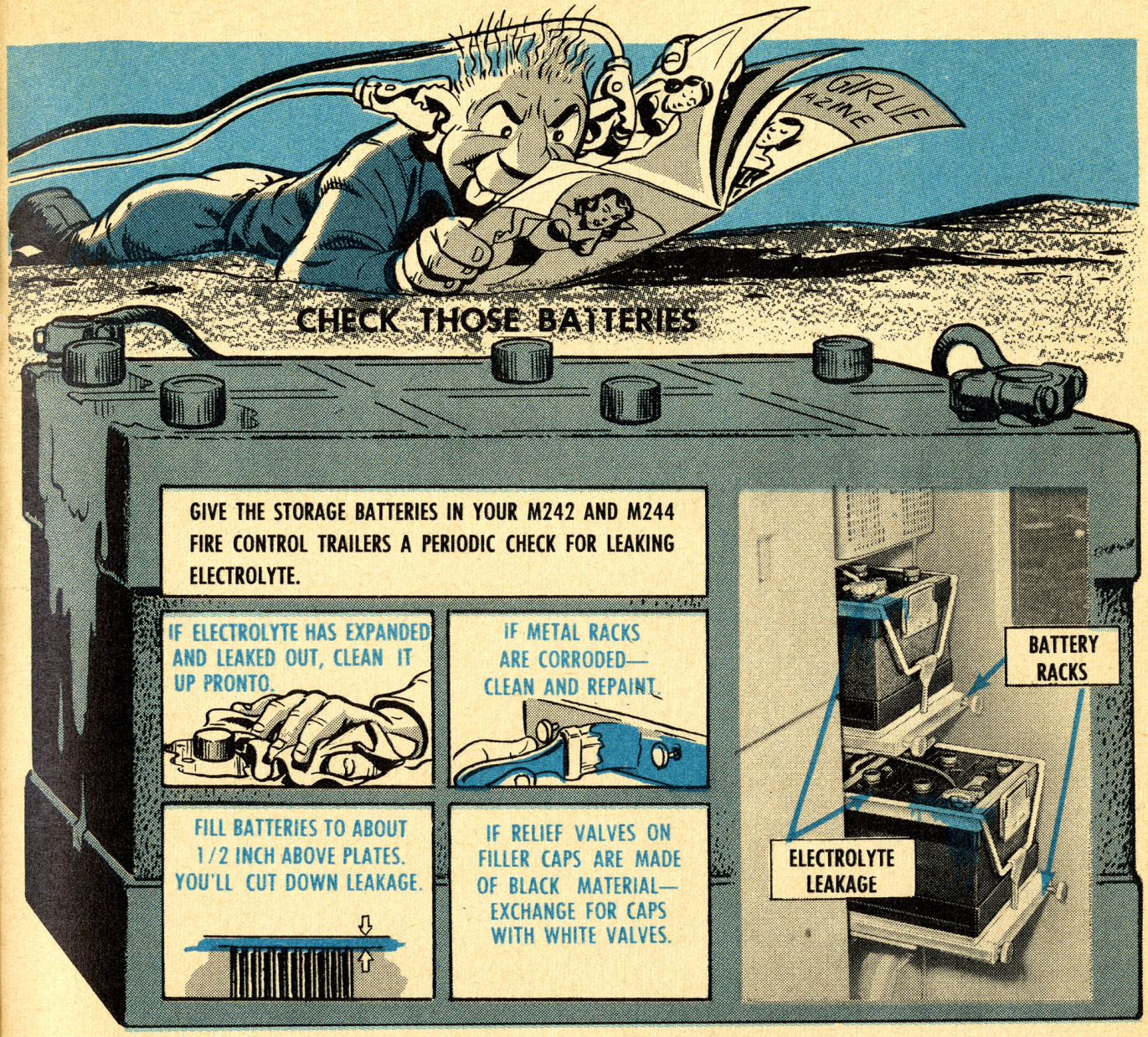
MAKE MARKINGS RIGHT ON THE PANEL OF BOTH TRAILERS SO THE NEXT GUY WILL KNOW.



A DAY LIKE TODAY

Is today one of those days when everything goes wrong. Nothing works right? Everything's all-thumbs? And left-handed?

Then you oughtta write to Sgt Half-Mast, c/o PS Magazine, Raritan Arsenal, Metuchen, New Jersey. Tell him all your problems. What goes wrong; what doesn't work right. Give him all the details, and he'll give you the dope on fixing things up. He'll lend a helping hand and punch nobody's ticket.



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SUPPLY & DIRECTIVES

ISSUE SLIP DATA

Dear Half-Mast,

Is there a regulation that says to use both the "Basis" and "Authority" lines on an issue slip (Form 446)? Isn't the authority itself the basis for the requirement? Why must the basis be explained?

Lt M. C. A.

Dear Lieutenant M. C. A.,

It's good supply procedure to use the basis line on emergency and special requisitions. In these cases the basis information simplifies editing, issuing and record keeping chores for the supply agency. On a routine requisition that shows its authority, the basis serves no special purpose.

There's no specific Army regulation which states that the basis must always be quoted. In some commands it's SOP to use both on **all** requisitions. In other areas it's called for only on special and emergency requisitions.

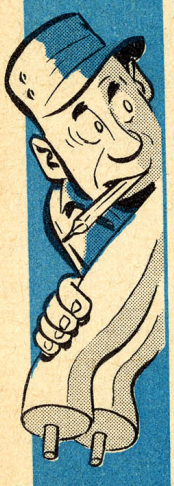
So, until a reg directs otherwise, the decision is up to local supply policy.

Half-Mast

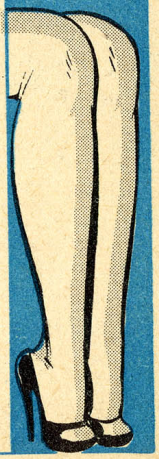
KNOW THE DIFFERENCE

Some of the parts and components of your early model armored-infantry full-tracked M75 (T18E1) vehicles will not interchange with the parts and components of the later models, so it's no use trying.

Just so you'll know what's what, better jot these down. ('Cause your SNL's G-260 don't say they won't mix.)



Item	Vehicle Serial No. 1 thru 376 and F1007 thru F1326	Vehicle Serial No. 377 thru 1006 and F1327 and above
Anchor, torsion	G200-5608208	G260-8368642
Box, control generator	G251-7528304	G260-7355925 (supersedes, optional and interchangeable with G251-7528304, G251-7968600 and G260-7954851 Boxes)
Cleaner, Air	G260-7952644	G260-7987761
Drive, final, left, assy	G260-7396127	G260-7987053
Drive, final, right, assy	G260-7396128	G260-7987054
Gasket, final drive cover	G260-7396135	G260-7761941
Housing, road wheel arm, spindle	G260-7396136	G260-8368666
Panel, Instrument	G260-7396166	G260-7987609
Plate, engine access	G260-7952361	G260-7987566
Plug, filler, drain and level	G260-7952779	G260-8368742
Seal, Door, left rear	G260-7952509	G260-7987465
Seal, Door, right rear	G260-7952516	G260-7987466
Switch, master	G260-7952056	G245-7975947
Tank, Fuel, left	G260-7381610	One metal tank G260-7987725 Optional w/G260-7987421
Tube, fuel filter	G260-7381835	G260-7987555



The SCOOP

HERE'S A LIST OF ADDITIONAL OFFICIAL PUBLICATIONS ON ORDNANCE EQUIPMENT WHICH ARE OF INTEREST TO A LOT OF YOU.

SNL's

Ord 8 SNL A-74 (TO 11W2-8-13-4), Mt, ball, cal. .30 (7722940), Nov 54

Ord 8 SNL A-96 (TO 11W1-15-8-4), Mt, ring, cal. .50, MG, M81, Nov 54

Ord 9 SNL F-207, Vol 6, System, remote control, M121A1, Oct 54

Ord 8 SNL F-235, Vol 17, Periscope, M19 and T41, Nov 54

Ord 9 SNL F-349, Setter, fuze, M26, Nov 54

Ord 9 SNL F-350, Vol 6, FCS, T38 control, power, T21E1, Oct 54

Ord 8 SNL F-390, Setter, fuze, M28, Nov 54

Ord 9 SNL G-268, Trk, gun lifting, heavy, 4x4, front, M249 and rear M250, Sep 54

Ord 9 SNL G-280, Inf veh armored, tracked, M59 (T59), Sep 54

TM's

9-6081-8, FCS T38, rep and rebld of power control T21E1, Sep 54

9-7017-5, Bilge pumps, vent blower, slip ring box, transm range sel control box, final drives, univ joints, turret and turret race ring for 76-mm gun tank M41 and M41A1, and SP twin 40-mm gun M42, Nov 54

9-7018, Med tank M4A3, Sep 54

9-7212, SP 155-mm gun T97, Nov 54

9-7406, Tractor-mounting Bulldozer T8E4, Oct 54

9-8202 (TO 19-75AB-55), 6-ton 2-whl trlr converter Dolly M197 and 8-ton 2-whl trlr converter Dolly M198, Nov 54

9-8222 (TO 19-75AC-50), 25-ton, 4-whl low-bed semi M172, Nov 54

9-9094-1, 8x16-in cap, sinle-ph, 60 cy, 110/220 v, 1/2 hp, horizontal, metal cut (machine) band saw (W. F. Wells Mod H) (40-S-567), Nov 54

9-9828-1, 2-5/8 to 5-1/2-in cap 110-v 60-cy single-ph port cyl boring machine (Van Norman Machine mods 77S and 77-S) (40-M-4), Nov 54

ORDNANCE MWO's

A58-W3, Cal. .45 sub MG M3 and M3A1: Instal improved sear for safety of user, O, Nov 54

A61-W7, Multi cal. .50 MG mt M45 series: Prevent water from accumulating in mount, F, Nov 54

A85-W3, 4.2-in mortar mt M24 (T61): Replace magnesium bridge base body with steel bridge base, F, Nov 54

F293-W2, Fuze setters M22 and M23: Insure correct position of stop pawl, F, Nov 54

G1-W55, Tanks M46, M46A1, M47: Instal aux gen engine high heat shroud and modif fire exting system, F, Nov 54

G1-W56, 76-mm gun Tank M41 (T41E1), M41A1 (T41E2); cargo tract M8E2: SP twin 40-mm gun M42 (T141); SP 105-mm howitzer T98E1; SP 155-mm howitzer M44 (T194); and track armor inf veh M75 (T18E1): Instal new tappet in suspension arm cushion stop assy—7984870, F, Nov 54

G184-W2, 38-ton HS tractor M6: Instal new tow and gun emplace pintles, Nov 54

G262-W21, 90-mm gun Tank M47: Bracket instal for air-to-ground radio, F, Nov 54

G741-W6, 3/4-ton 4x4 ambu trk M43: Instal swing-type spare wheel carrier, F, Nov 54

G744-W16, 5-ton 6x6 truck chassis M40, M61, M63, and M139; 5-ton 6x6 cargo trks M41, M54, and M55; 5-ton 6x6 cargo van trk M64; 5-ton 6x6 dump trk M51; 5-ton 6x6 med wrecker M62; 5-ton 6x6 tractor-wrecker trk M246; and 5-ton 6x6 trk-tractor M52: Provide means of prevent transm lubricant from entering clutch housing, F, Nov 54

SB's and TB's

SB 9-1, Ord maj items and maj combos and pertinent publications, Nov 54

TB 9-819A-17 (TO 19-75CAK-8), 2-1/2-ton 6x6 cargo truck mod M135, M211, M215, M217, M220, M221, M222: Inspect steering pitman arm shafts for twisting, O, Nov 54

TB 9-2855-20, Instruct for instal personnel hter kit for M46 tank (24V) (SNL G-244), F, Oct 54

TB 9-8638-1, AO-268-3A, AOS-895-3, AO-895-4, and AV-1790 Series Continental engines: Availability of 14-mm solid copper-type spark plug gaskets, O, Nov 54

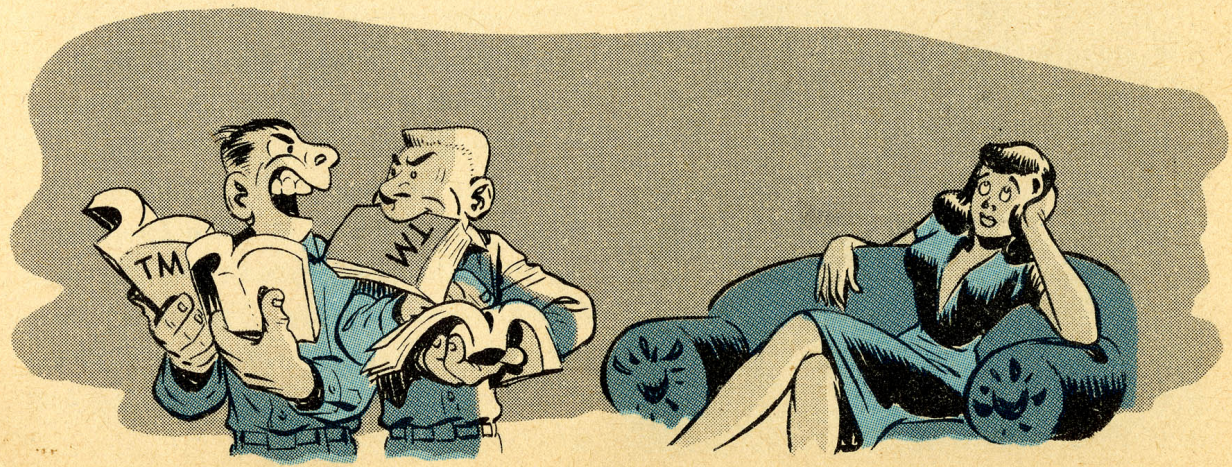
TB ORD 583, Multi cal. .50 MG Mount M45 series; Adapting spare lamp cans when reflex sight M18 is installed on mount M45 Series, F, Nov 54

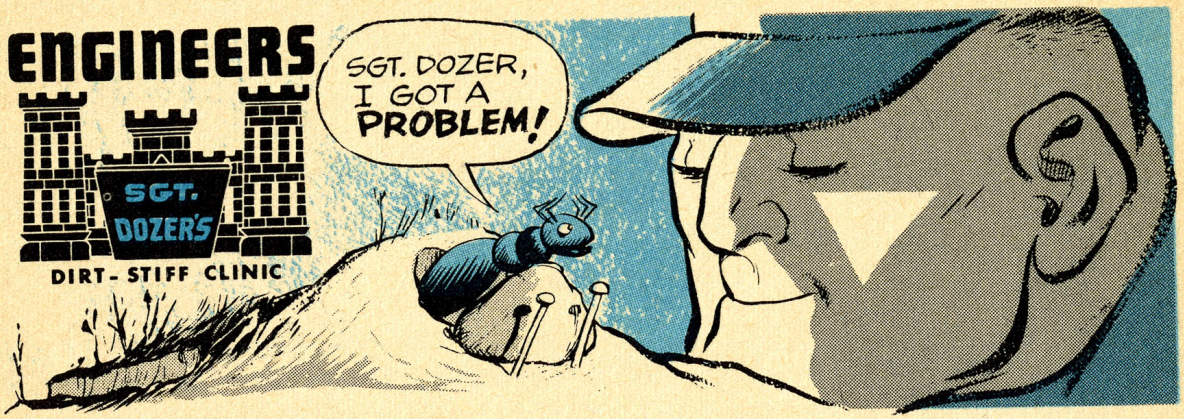
NOTE—On TB's and MWO's:

F—Field Maintenance

O—Organizational Maintenance

D—Depot Maintenance





WEAK "KNUCKLES"

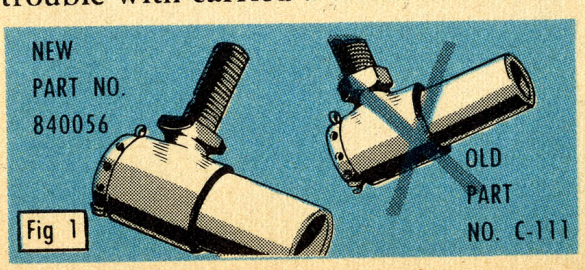
Dear Sgt Dozer,

I sure had a lot of trouble with the ball joints on the crowd and retract linkage of the Gar Wood "Buckeye" Crane I ran during a recent maneuver. These knuckles kept breaking off just behind the 9/16-in hex nut when too much pressure was used. I made some new knuckles out of oversized bolts and added to the radius just behind the hex nut. This ended my troubles, as the oversized bolts held up better than cold-roll or soft steel.

PFC G. M.

Dear PFC G. M.,

Man, you called the shot right down the middle. It's smooth-thinkin' guys like you who make things easier for your buddies. The manufacturer thought the ball joints on the crowd and retract linkage of the "Buckeye" were weak, too. And he's done something about it. The ball joint you had trouble with carried a stock number of C-111. Now you can get a new and much stronger joint for your "Buckeye." That new part number is 840056. You can see the difference in the size in Fig 1. The new ball joint has been used on all late models of the crane, beginning with M20A-481. Nope, you don't have to make 'em any more. Just order 'em and you're in business.



Sgt Dozer

TOOT, TOOT!

Dear Sgt Dozer,

Why aren't cranes and shovels equipped with windshield wipers and signal horns? These accessories aren't even authorized as a modification for this equipment.

From my experience as a heavy equipment operator I feel that these items would be very cheap life insurance for all concerned.

The signal horn would be a real safety feature, especially on loading or hoisting operations. A horn beats yelling anytime when it's necessary to warn people on the ground that they're dangerously near trucks that are backing up, or when they're in the blind path of other moving equipment.

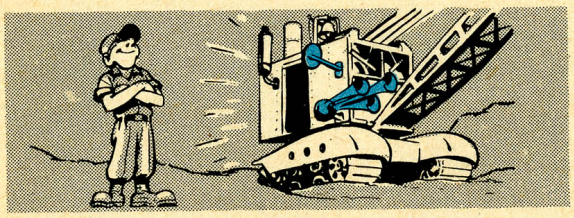
As for the windshield wiper—well, it's just plain impossible to keep the windshield clean any other way during operations.

It sure would help if you can tell me if there's someway to get these items for my equipment.

Cpl L. B.

Dear Cpl L. B.,

These accessories aren't used on standard Engineer equipment. You see, this type of equipment is usually operated from an open cab and with the aid of hand-signals from a ground guide.



As for wipers, they're definitely out. It makes a lot of safety-sense to operate from an open cab. With the windshield and windows pushed or folded out of the way, the cab stays well ventilated at all times. That way there's no danger of asphyxiation and the operator has a much clearer and safer view of whatever he's shoveling, clawing or hoisting. He can see the ground crew better, too, and vice versa.

You're right about the need for a warning system for some heavy equipment operations. I know a crane operator who takes his old GI whistle on all jobs and says, "It's saved me sweat many a time."

If you can show that with your specific operation the horn's an added safety device, get your supervisor to check AR 750-5 (Jan 53) and its Changes 1, 2 and 3. They'll tell you when and how emergency changes or additions can be made to approved standard equipment.

And last, but not least, it's always a good idea to discuss safety problems with the Post Safety Officer. Ask your boss to take a look at AR 385-10 (Mar 53). It covers safety responsibilities at installations.

Sgt Dozer

CALL FOR AN ERMR

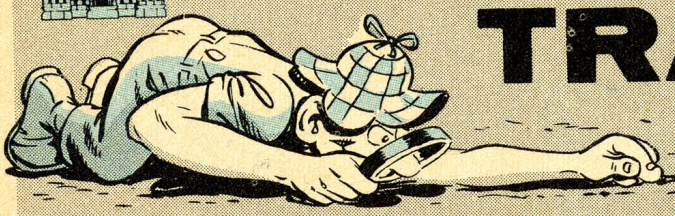
Ever had a maintenance problem that's had you up a tree? Betcha you have many times. The next time you run up against a toughie, your S-3 and S-4 officers can send out an SOS to your Engineer Regional Maintenance Office. These offices have highly skilled Engineer Regional Maintenance Representatives (ERMR's) who are ready, willing, and able to lend a hand with most any problem except financial.

F'r instance, they'll provide you with the dope on maintaining and operating all your Engineer equipment (new and old), help you get the right parts, tools and publications, show you how to get rid of excess equipment, and assist you in getting unserviceable equipment replaced. Besides that, they have a whole bag full of tricks to show you how to do your maintenance chores easier and better. These are just a few of their activities. You can find all the dope in AR 750-512. Better check it today.

Yep, the ERMR is your man. All you gotta do is let him know you got troubles.

Some Hot Clues On...

TRACKING



No need for alarm—and don't panic and run for the lube can—if there's stiffness in your Caterpillar's new tracks.

On new tracks, like on a lot of other new parts, a certain amount of stiffness is OK—at first. "Wear-in" should eliminate this once your tractor gets in some rolling.

This kind of stiffness you can take without too much worry. On the other hand, if your tractor's crunching its track parts to bits because of wrong track adjustment, that's a stiffness of a different flavor . . . and you'd best make tracks for your nearest repairman. And, of course, you do the same when your tractor's clomping along on loose tracks.

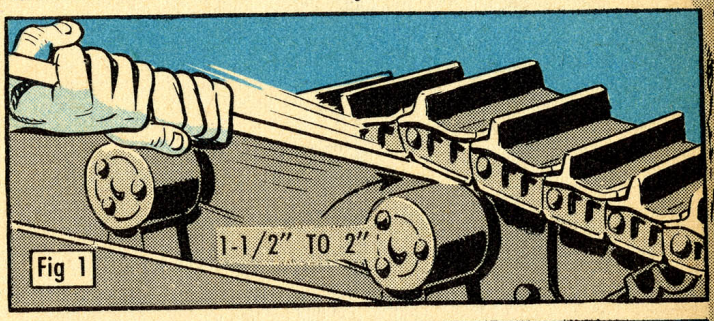


Fig 1

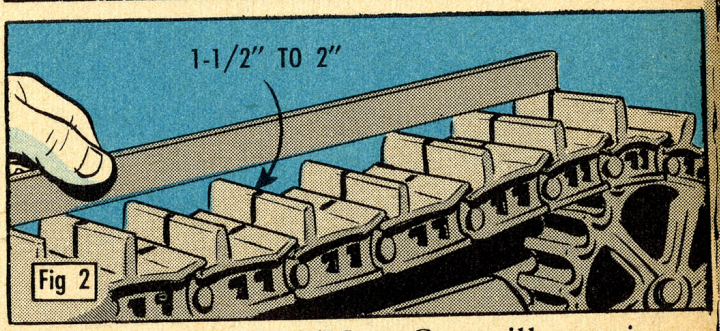
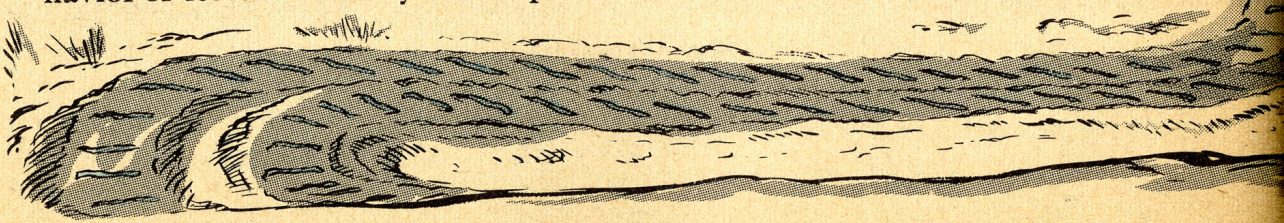


Fig 2

Track adjustment on most series of D2, D4, D6, D7 and D8 tractors is correct when the track can be raised 1-1/2 to 2 inches above the top-center track-carrier-roller (Fig 1). On earlier D2 tractors that don't have carrier rollers, the adjustment is correct when there's 1-1/2 to 2-in sag as in Fig 2.

You can get full details on track adjustment for your own model tractor in its TM or Caterpillar maintenance manual.

Timely adjustment and care of track parts is the best track-saver known . . . and here are some of the things your mates in the field and depot shops can do to keep your tractor track-happy . . . just don't neglect or hold up reports on bad behavior or let 'em wear beyond the point where they can't be reclaimed economically.



Some Hot Clues On...

TRACKING CATS

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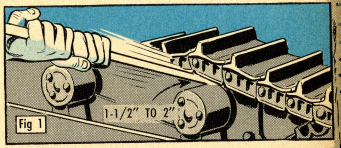
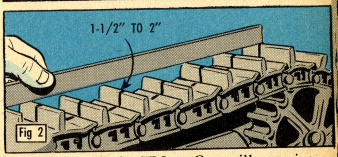


Fig 1



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Here are some things that'll make 'er track tracks for a long time:

	Track Part	Treatment
	Pins and Bushings	Push out and rotate to give new wearing surfaces.
	Sprockets	Switch 'em from one side to the other and build up worn surfaces with welding rod or weld on new rims.
	Idlers	Keep them alined right—saves replacements due to worn flanges. Switch side to side like sprockets.
	Rollers	Rotate 'em to provide new wearing surfaces, just like you switch tires on a truck.
	Shoes	Worn grousers can be built up with welded bars to keep the shoe in the running. Keep those shoe bolts tightened up.

CATS

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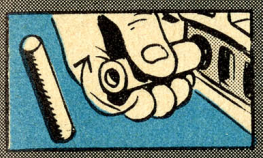
	Track Part	Treatment
	Pins and Bushings	Push out and rotate to give new wearing surfaces.
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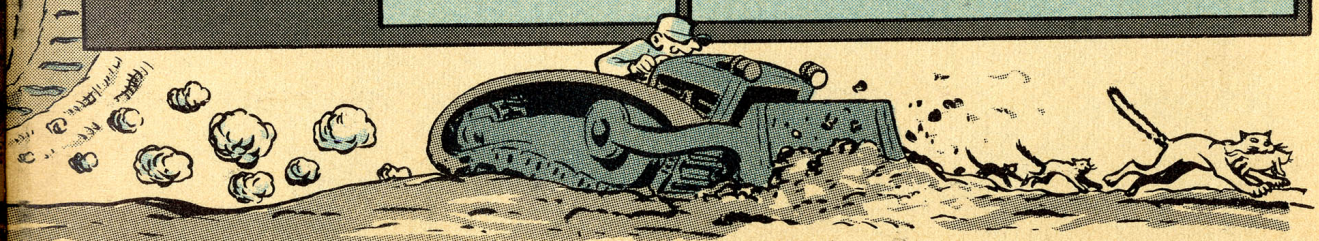
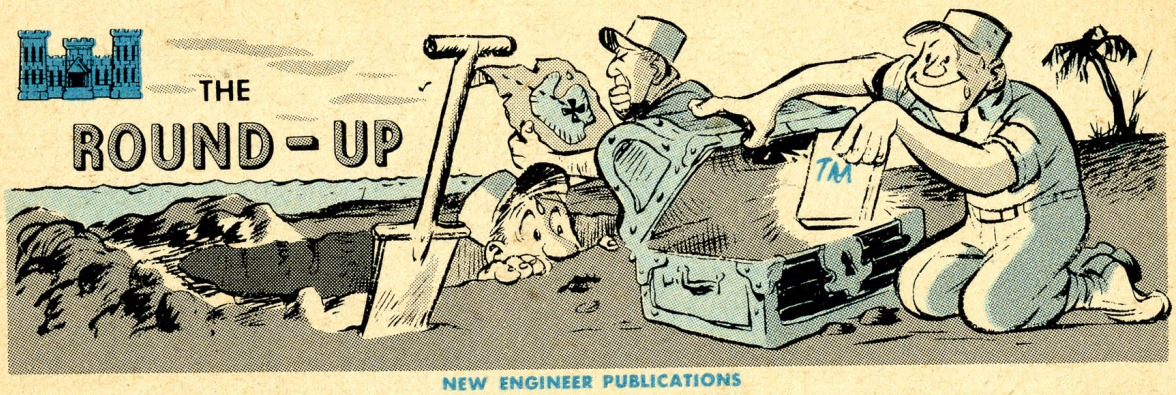




NEW ENGINEER PUBLICATIONS

TM's

5-5065, Comp, air, LeRoi Mod 210 G 1, 11 Aug 54

5-5180, Eng, gasoline, Hercules Mod ZXB, 11 Aug 54

5-9486, Air Cond Unit, Reco Mod F-3, 19 Aug 54

5-9859-1, Crane-Shvl, Bucyrus-Erie Mod 22-B, 9 June 54

5-4085, Drill, pneu, rock, Worthington mod WS-55, 16 Sep 54

5-9596, Conveyor, belt, Ferguson mod, 30 Sep 54

5-5101, Comp, air, Davey Air Chief mod 315 WD, 10 Sep 54

5-9181, Convrtr & Chgng Unit, Carbon Dioxide Ice Conv Corp mod 300-S, Oct 54

5-9345, Plow, snow, Gledhill mod JV5.5E, 18 Oct 54

5-9518, Crane-Shvl, Hanson Clutch mod 61, 7 Sep 54

TB's

5-1161-1, Dist, wtr, Rosco Mod MOE, 27 Sep 54

5-2091-1, Pump, cent, Carver Mod 1½ WHI, 4 Oct 54

5-4075-1, Drill, pneu, Hardsocg Mod D 45-1, 24 Aug 54

5-4092-1, Breaker, paving, Chicago Pneu Mod CP-115, 30 Aug 54

5-5104-1, Comp, air, American Brakeshoe Mod WG-211-XP, 28 Aug 54

5-6122-1, Duplictr, spirit process, Dick Mod 299, 27 Sep 54

5-9128-1, Shop, mobile gen'l purpose rpr, Couse Mod Med, 22 Sep 54

5-9335-1, Sprayer, paint, DeVilbiss Mod PNM-616, 22 Sep 54

5-9465-1, Air Cond Unit, Refr Eng Mod TA-5226, 8 Sep 54

5-9474-1, Air Cond Unit, Typhoon Mod PAG 300, 8 Sep 54

5-9477-1, Air cond unit, Typhoon Mod SA-500, 15 Sep 54

5-4099-1, Drill, pneu, rock, Davey mod DS-58, 5 Oct 54

5-1222-1, Angledozer, Berg mod CB-500C, 12 Nov 54

5-4039-1, Drifter drill, pneu, Chicago Pneu Tool Co. CP-60N, 12 Nov 54

5-5391-1, Comp, air, 3CFM, Harris mod 53-102, 15 Nov 54

5-6007-1, Camera, copying, Rutherford mod MAC, 8 Nov 54

5-9833-1, Hammer, pneu, forging, Chambersburg mod, 5 Nov 54

5-5026-1, Gen set, Intnl Dsl mod, 8 Oct 54

5-2092-1, Pump, cent, Gorman-Rupp mod 3801, 15 Oct 54

5-2114-1, Pump, cent, Reiner mod GP-55, 14 Oct 54

5-5382-1, Gen set, Homelite mod 24AD120-23, 18 Oct 54

5-5389-1, Comp, air, Harris mod 53-101 Ex, 19 Oct 54

5-5312-1, Gen set, Elec Mach & Equip Co, HC-30W-400, 18 Oct 54

5-9632-1, Crane-Shvl, Thew-Lorain mod TL-25K, 19 Oct 54

5-4446-1, Sander, flr type, Clarke mod S-8, 28 Oct 54

5-9173-1, Hoist, Underwood mods M-1 and M-2, 29 Oct 54

5-9234-1, Sawmill, Corinth mod 1-C, 25 Oct 54

LO's

5-1023, Dryer, agg, Std Stl Mod 4131, 20 Aug 54

5-1158, Kettle, asph rpr, Littleford Mod 84-HD-3

5-1188, Roller, rd, Huber Mod, 20 Aug 54

5-1230, Plow, disc, Deere Mod 205, 21 Aug 54

5-1258, Conveyor, belt, Pioneer Mod, 29 Jul 54

5-1316, Crane-Shvl, Bay City Mod 65, 30 Aug 54

5-2015, Pump, cent, Barnes Mod 40M, 30 Aug 54

5-2031, Pump, cent, Carter Mod 4MHW, 23 Aug 54

5-2091, Pump, cent, Carver Mod 1½ WHI, 20 Sep 54

5-3476, Truck, dump body, Mack Mod LR, 23 Aug 54

5-4099, Drill, pneu, Davey Mod DS-58, 4 Aug 54

5-5022, Gen set, Ready Power Mod RD-6A, 20 Aug 54

5-5104, Comp, air, American Brakeshoe Mod WG-211-XP, 30 Aug 54

5-5655, Gen set, Onan Mod 10 HQ-3R/552R, 21 Aug 54

5-6122, Duplictr, spirit process, Dick Mod 299, 9 Sep 54

5-9128-1 and 5-9128-2, Shop, mobile, gen'l purpose rpr, Couse Mod MED, 20 Aug 54

5-9128-3, Shop, mobile, gen'l purpose rpr, Couse Mod MED, 20 Aug 54

5-1002, Mixer, asph, Barber-Greene mod 848, 8 Oct 54

5-1026, Pump, asph, Littleford mod US-3C, 8 Oct 54

5-1254, Power unit, gas-engine, Pioneer mod. 12 Oct 54

5-5010, Gen set, GM mod 6903, 2 Oct 54

5-5338, Comp, air, American Brake Shoe mod GE-320, 29 Oct 54

5-9234, Sawmill, port, Corinth Mod 1-C, 30 July 54

5-9859-2, Crane-Shvl, Bucyrus-Erie Mod 22-B, 23 Aug 54

5-4054, Digger, clay, Hardsocg mod CD-25, 20 Aug 54

5-4092, Brkr, paving, Chicago pneu mod P-115, 30 Aug 54

5-5340, Comp, air, Schramm mod 105, 20 Sep 54

5-5385, Gen set, Consol Dsl mod 1780, 17 Sep 54

5-9528, Crane, trctr mtg, Hyster mod HW, 17 Sep 54

5-1100, Roller, road, Galion "Chief" Serial W-89665 & up, 1 Oct 54

5-4075, Drill, pneu, rock, Hardsocg mod D45-1, 20 Aug 54

5-4153, Tamper, backfill, Hardsocg mod BT-32, 20 Aug 54

5-9143, Auger, earth, Buda mod Y1, 1 Oct 54

5-9833, Hammer, pneu, Chambersbg mod, 5 Oct 54

ENG's 7 & 8's

9594, Conveyor, belt, Geo Haiss mod 487, 7 Sep 54

9109-4, Clng Unit, stm, Homestead mod OD-150, 14 Sep 54

5045, Gen set, Onan mod WC5S, 16 Sep 54

9217, Dolly, 4-wheel, 20 ton, all makes & mods, 14 Sep 54

3022A, Mower, trctr mtg, Mpls-Moline mod SM, 21 Sep 54

MWO's

263-1, Bridge, fltg, pneu float, 30 Sep 54

5012-1, Gen set, Hollingsworth Mod JH-3, 28 Sep 54

5053-1, Gen set, Reiner mod GGC-30AC, 8 Oct 54

5072-2, Gen set, Hobart mod HF-30G, 7 Oct 54

5146-1, Gen set, Hollingsworth mod CE-50-AC/WK2, 5 Oct 54

5006-1, Gen set, Intnl Fermont mod M30GCT-SH6, 5 Oct 54

9818-1, Lubricator, Graco mod 225036, 25 Oct 54

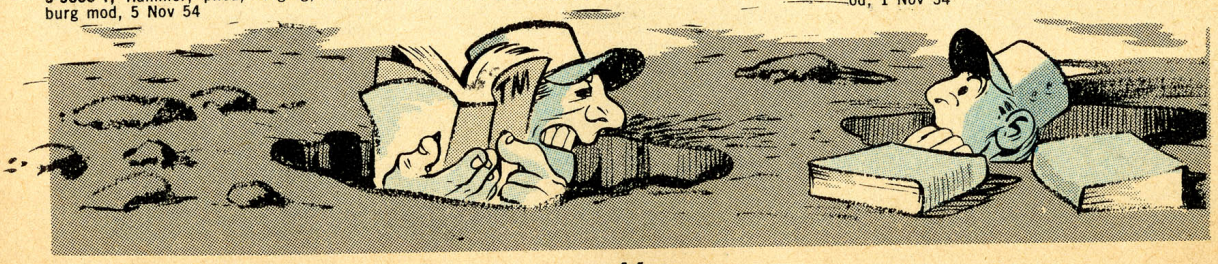
1004-1, Elevator, agg, Barber-Greene mod 834-78, 10 Nov 54

1014-1, Htr, asph, Cleaver-Brooks DS-3, 10 Nov 54

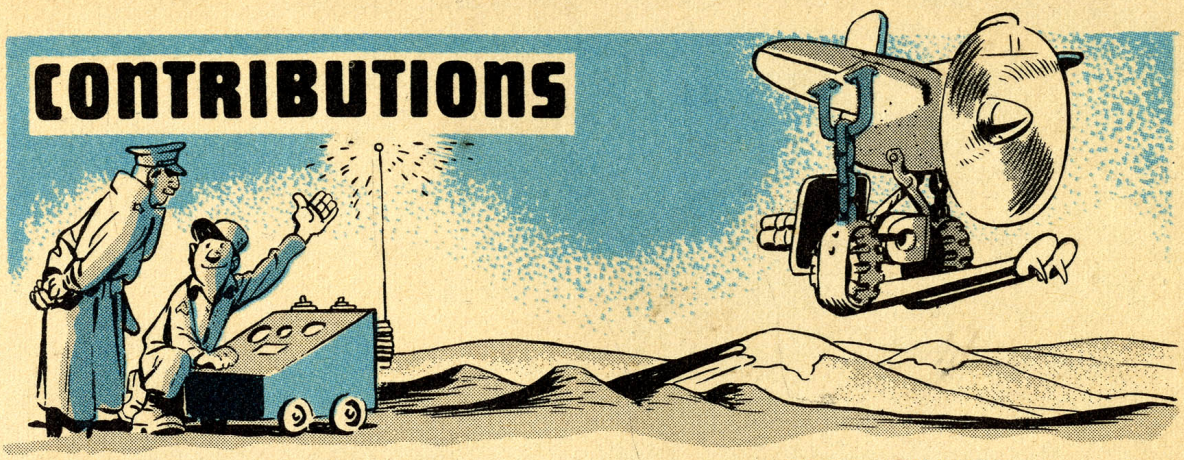
1126-1, Mixer, rot tiller, Seaman mod ABT-48, 10 Nov 54

5131-1, Wldr, elec arc, Hobart mod GR-315-3S, 1 Nov 54

5221-1, Eng-Gasoline Aerojet-Gen'l, Crosley mod, 1 Nov 54



CONTRIBUTIONS



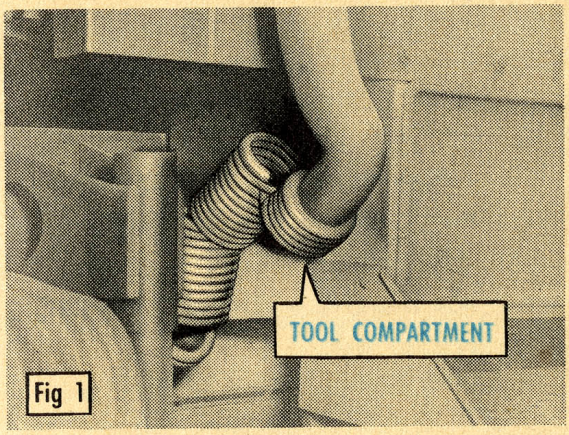
FIRE IN THE MAKING

STOP STOPPER

Dear Editor,

We keep an eye on the bellows section of our M133 series GMC's exhaust stack for rusting and breaking thru.

There's a tool box right next to it (Fig 1) that should be kept clean. Oily rags, oil-filter cartridges or anything that'll burn should be **kept out of it.**



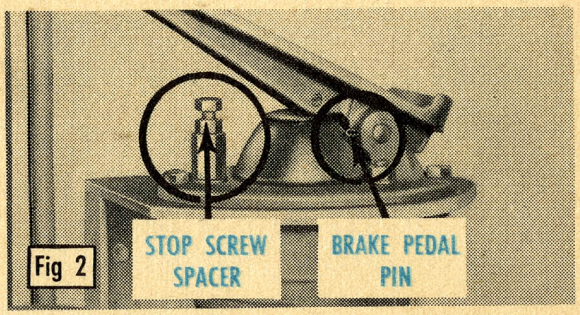
If that bellows section goes to pot, it'll shoot a red-hot blast on the tool compartment. If there's anything in it to burn, it'll burn. It's happened.

We check our bellows section for cracks or rusting so we can replace it before it goes.

Maryland National Guard
Havre de Grace, Maryland

Dear Editor,

Our F32F convertible bus was without a brake stop, so we used your good ol' Army ingenuity and made up an



adjustable stop like you see in the big circle (Fig 2). Without this gadget you might break the pedal off when your foot hits the brake pedal to stop. That's no laughing matter.

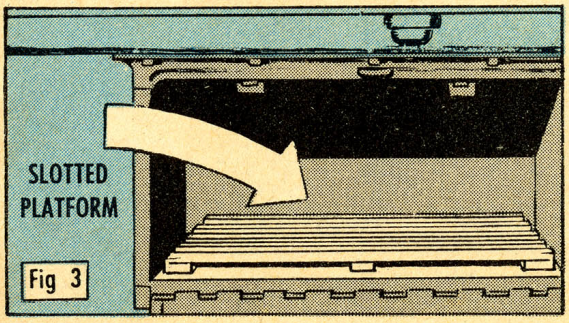
Also, we keep a daily eye on the brake-pedal pin to make sure it's installed right and stays that way.

Pvt James F. Amburgey
Canal Zone

RAISE THE ROOF

Dear Editor,

We made a slotted platform for our trailer's tarpaulin box that holds our tarps above dirt, water and mud that sometimes seep through and puddle on



the bottom. The wet stuff makes rot and mildew that eats holes in canvas. This stops that (Fig 3).

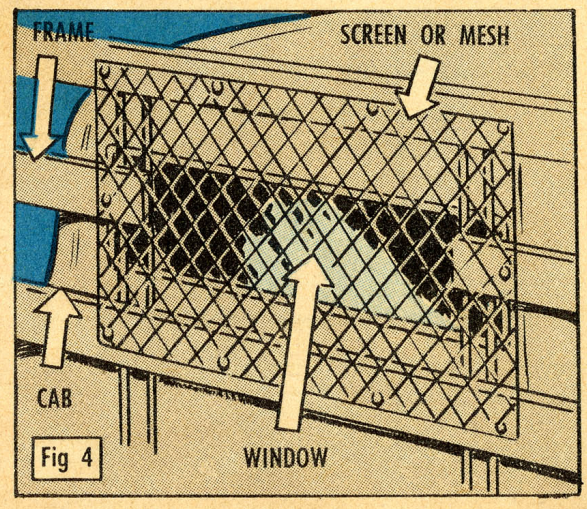
MSgt Grady E. Miller
Ft Eustis, Virginia

REAR-GUARD ACTION

Dear Editor,

Drivers who haul cargo without their rear window protected will sooner or later end up with their glass busted. 'Specially drivers of the 1-1/2-ton and 2-1/2-ton stake and platform trucks, which have the rear window exposed to the whims and whams of shifting cargo.

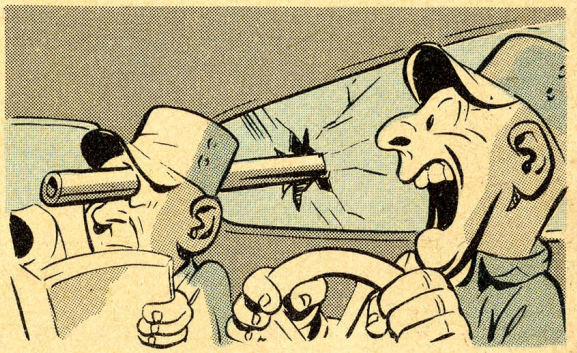
Putting a whoa to this sort of damage is a simple matter. All we used was some heavy wire mesh or screen. And, of course, permission from your CO or Ordnance officer.



We attached the screen to the rear side of the front stake section so it keeps the glass from being rammed by the cargo during sudden stops (Fig 4).

Commercial mesh or screen will do the job fine.

Wallace Englehart
Ft Dix, New Jersey



(Ed Note—This sort of fix gets the go-ahead from AR 750-5, with Changes 1, 2 and 3.)

OVERHEAD VOLTAGE

Dear Editor,

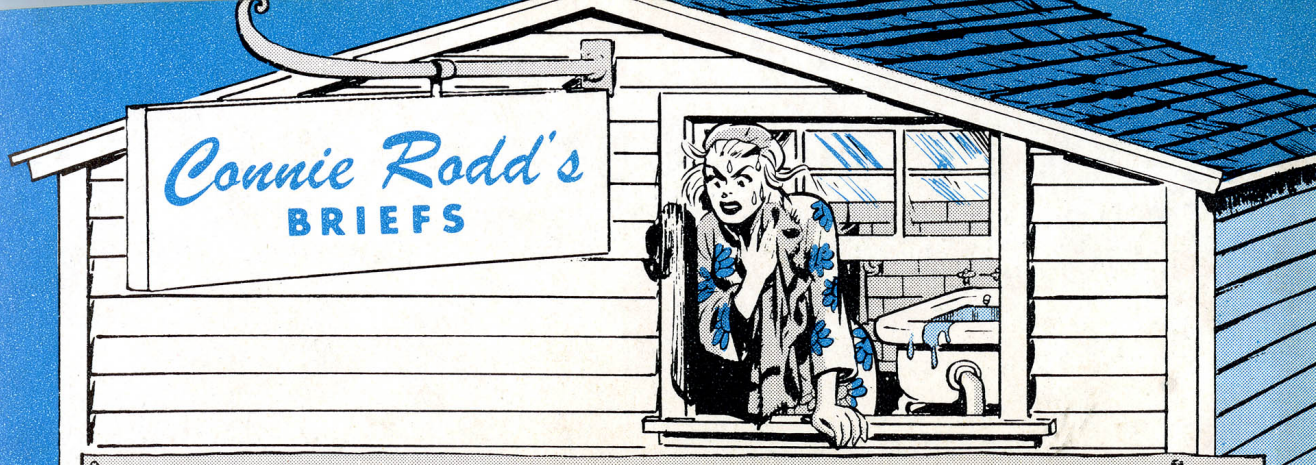
It's a darn shame, but there's a mighty good wrecker man who isn't around any more. He had his hand on a steel lift, steadying it, when the top touched a high-tension line.

Now whenever we find we have to work a wrecker or any other equipment near an electric line, we try to get the power cut off.

If we can't, we keep a careful eye on the line and the load at all times.

3657 Ord Co (DS)

(Ed Note—Just remember that a man standing on dry boards and guiding his load with a dry rope has a lot better chance if it **should** *touch than a man on the ground touching the load with his hands.)*



Slaving your tanks

The dope on using a slave cable (Ord Stock No. 17-C-568) to start the engine of your M46, M46A1, M47 or M48 tanks is in TB Ord 537. If you use make-shift methods, you'll burn out the instrument panel wiring or ruin the master junction-box.

Take it easy

You gotta use kid gloves when removing or replacing the extractor-plunger locking-screws (Ord Stock No. D038-7225199) on your 90-mm M2. Get too rough with 'em and they'll break off in the breech ring. So use the right tool and take it easy, will ya'?

Fuze-setter turn-in

You AAA men with 90-mm guns may as well turn in those M23 fuze-setters. You simply don't need 'em. Your M13 will do everything that needs to be done in case your M20 setter-rammer goes on the blink. So you might as well trot those M23's right back to supply.

Bulldog tail lights

Here's how to order replacement lights for the backside of your M41 tanks: Light, tail and stop, Ord Stock No. G251-8378786. They're not in the SNL's yet, but're authorized for using units.

Call or twix it

Having trouble with your 75-mm T83E1 gun assembly recoiling into the loader tray assembly or the feed pawls working on both sides at the same time??? Well, **don't touch it.** Your Ordnance officer wants to know quick so's he can get in touch with the Office, Chief of Ordnance, Attn: ORDFM, or Frankford Arsenal, Attn: FSM 10, by telephone or teletype and let them know you're having trouble. A technician'll be there on the double.

Point of satisfaction

Too high an engine idle speed for your Hydra-Matic trucks will not only cause the vehicle to creep but doesn't do the transmission any good. Check the idle according to para 112, TM 9-819A, and get it down to 375-RPM's—that's the point of satisfaction.

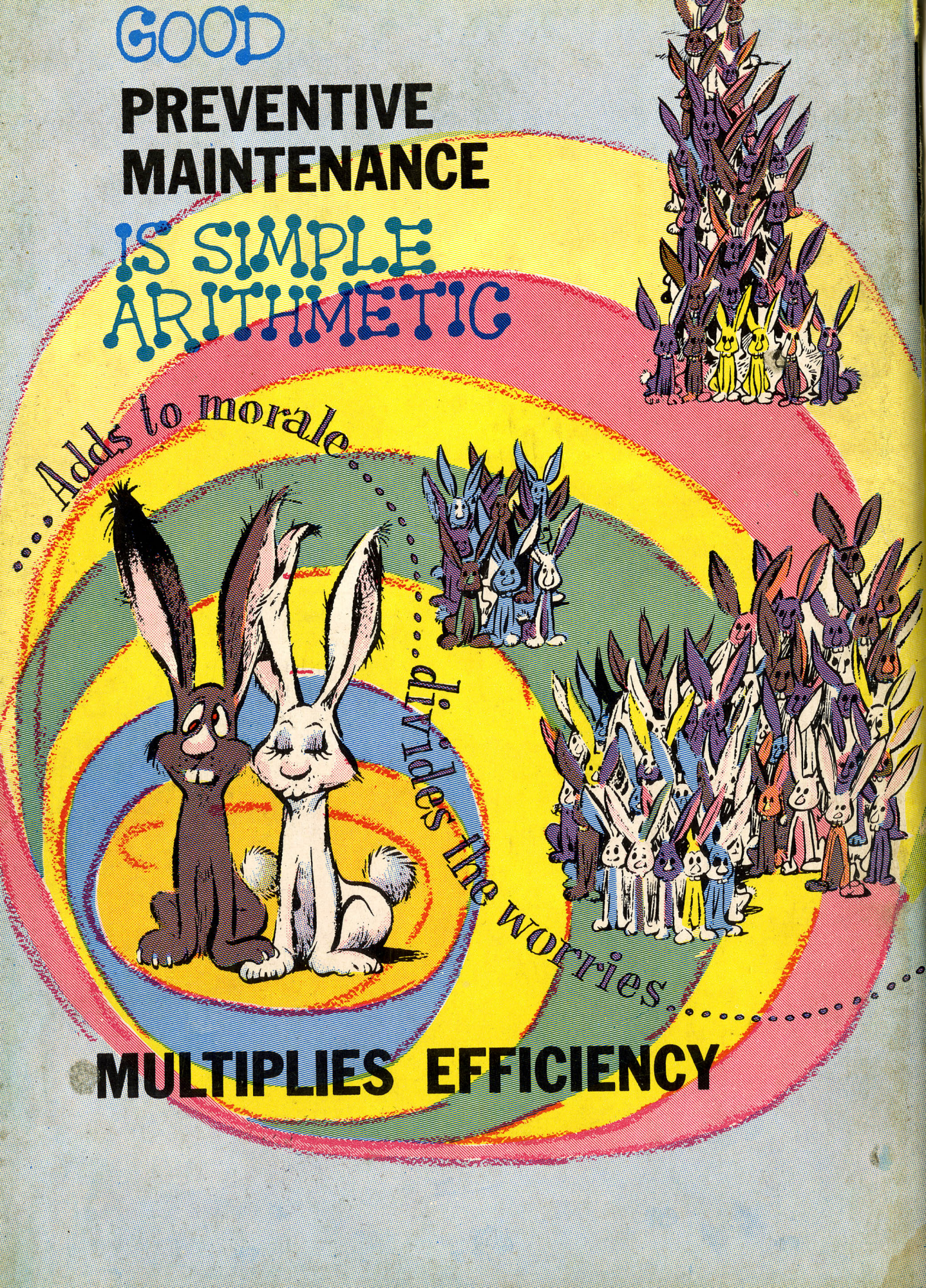
Tb ord not tb?

Case you're maybe questioning some of the data on track items in TB Ord 562, please to sit tight and hold y'fire a mite longer. It's being revised. You'll be seeing the latest dope on the subject out in a new directive soon.

GOOD

PREVENTIVE MAINTENANCE

IS SIMPLE ARITHMETIC



MULTIPLIES EFFICIENCY